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American Veterinary Medical Association

FORMERLY

AMERICAN VETERINARY REVIEW

(Original Official Organ U. S. Vet. Med. Ass'n)

EDITED AND PUBLISHED FOR

The American Veterinary Medical Association

by W. H. Dalrymple, Baton Rouge, La.

CONTENTS

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W. H. DALRYMPLE, Editor. BATON ROUGE, LA.

VOL. LIV., N. S., VOL. 7. DECEMBER, 1918. No. 3.

PEACE.

"To reap the harvest of perpetual peace,
By this one bloody trial of sharp war."
—*Richard III.*

As we were getting our material in readiness for the December Journal, the joyful news was flashed over the cables that the roar of cannon and the rattling of sabres had ceased over the battle fronts in Europe. Or, in other words, an armistice had been signed, and the beginning of a new era in the history of nations was in sight, if not actually here.

If the world is to have perpetual peace after the past fifty months of bloody strife, which is sincerely to be wished for, then the sacrifice, appalling as it has been, will not have been in vain.

All the nations grouped on the side of humanity and civilization have had their share in the victory, and all arms and branches in the services of the different countries have had their places to fill in the victory machine; and we believe that when history has recorded the achievements of each and all, those of the veterinary services will receive their due mede of recognition, although the world, generally, may not be apprised of them. We are familiar, from record, with what some of the European army veterinary services have accomplished in the conservation of

animal life and usefulness at the front; and we are convinced that our own authorities must now realize, and recognize, the immense importance of a regularly organized veterinary service in connection with our own army, as there can be no doubt, whatever, that the Veterinary Corps of the United States Army has fulfilled its mission and given an account of itself equal to that of any other nation.

It has been said that it takes a calamity to bring about reforms, and there can be little question that the world's calamity through which we have just passed will have been the means of firmly establishing the veterinary profession, both civil and military, in this country, as one that is absolutely essential to the country's wellbeing in times of peace as well as in those of war.

An army service so organized and equipped as to be able to return to usefulness at the front some 80 per cent. of wounded animals, which the British veterinary service is said to have done, is bound to receive recognition, as it means not only the maintenance of efficiency of the fighting forces, but the saving of almost fabulous amounts of money.

We feel sure that our United States Veterinary Corps has done its share, in its own special department, in bringing the war to a successful issue, and The Journal hopes that when its duties are fulfilled, both overseas and at home, the members will return safely to engage in whatever branch of professional work may await them.

It has been an uphill pull to gain full recognition of the veterinary branch of our national army, but it seems to have come, and come to stay, even if it did take a world's conflict to hurry it along; and those who worked so earnestly and indefatigably to bring it about must now feel compensated for what they did toward its accomplishment.

ANTHRAX INFECTION DIFFICULT TO CONTROL.

Reports from different sections of the country with regard to anthrax would indicate that the spread of the infection is, unfortunately, rather on the increase than otherwise, notwithstanding the efforts of sanitary organizations in the different states whose purpose is to endeavor to check the spread of the infection of this, as well as that of other contagious, and expensive, animal maladies. We believe that good results are being

obtained by the intelligent use of preventives in the shape of vaccines and serums, but the coöperation of stock owners in the enforcement of sanitary regulations seems far short of what it ought to be in controlling anthrax infection. However, there are so many carriers of this infection that it is difficult, even with prescribed sanitary regulations reasonably carried out, to place a check on the numerous sources through which it may be introduced, and concerning which many stock owners have little or no conception. Some idea of these sources may be had, as well as of the insidiousness of anthrax infection, from the last annual report of the Chief Veterinary Officer of the British Board of Agriculture and Fisheries, a part of which we take the liberty of quoting in this connection.

During the calendar year (1917) there were 423 outbreaks of anthrax confirmed by laboratory tests—201 in England and 202 in Scotland.

With regard to the 343 outbreaks which occurred on previously clean premises, inquiries pointed to the following being the probable source of origin:

1.	Effluent from tanyards or other industrial undertakings getting into streams	2
2.	Feeding of infected carcass offal to swine, etc	1
3.	Use of imported feeding stuffs	203
4.	Use of artificial manures (commercial fertilizers) of animal origin on the land	34
5.	Use of both imported feeding stuffs and artificial manures	49
6.	A recent death, not reported, but not improbably anthrax	10
7.	No explanation obtainable	44

Eight human beings developed anthrax, one of whom appeared to have contracted the disease whilst handling affected swine with a view to examining their throats; the others probably became infected as a result of slaughtering affected animals or cutting affected carcasses.

The handling of anthrax-infected hides is not an uncommon source of the origin of outbreaks in tanneries in the United States. Only last year the health authorities of Massachusetts reported an outbreak where twenty-five tannery workers became infected, in three contiguous towns, from a shipment of hides which was traced to Hankau, China, as the point of origin.

The effluents from such tanneries getting into streams would be a very fruitful source of spreading the infection amongst live stock on pastures bordering such streams, instances of which have already been reported, we believe, in our own country.

The sources of origin which impressed us most were those of infected feeding stuffs, and commercial manures of animal origin,

although the writer has, on more than one occasion, experienced an outbreak of anthrax from infected commercial feeds, and we have read of infection being introduced and scattered over the land in infected manures, possibly of foreign origin where sanitary conditions were not observed, as may have been the case in Great Britain, which country does, or used to, import considerable quantities of manures from other countries, in the form of bones and bone meals.

Be that as it may, we believe it would be well to give more consideration than hitherto to these two probable sources of origin, especially in places where the infection had not previously existed, knowing that they have been "found guilty," or at least, extremely suspicious, in other countries. However, the various sources of origin of anthrax infection which we have enumerated, and others, no doubt, which we have not alluded to, only go to emphasize the truth of our original assertion, that anthrax infection is difficult—in fact, extremely difficult—to control, which would suggest that efforts along sanitary lines should be redoubled in connection with this contagious, fatal, and most expensive communicable disease.

RESTRICTIONS ON PAPER.

The Pulp and Paper Division of the War Industries Board has required a reduction in the amount of paper used by the Journal the present year, which means several thousand pounds less than were being used before the requirement came into effect, and previous to the recent large addition to the membership. To meet this requirement of the Division, we will be compelled for the present to economize as much as possible in order to keep within our allowance of paper.

Therefore, if our readers should observe a slight reduction in the number of pages of reading matter in this and subsequent issues, they will know the reason why. It is to be hoped, however, now that hostilities in Europe have ceased, these restrictions may be removed earlier than at first anticipated.

THE VETERINARY PRACTITIONER IN THE CONTROL OF INFECTIOUS DISEASES.

VERANUS A. MOORE, Ithaca, New York.

The great war in which we are engaged, with its unprecedented tax upon the resources of the country, has placed in bold relief not only the patriotic but also the professional duties of the veterinarian. Not until the recent demand for animal products did our people realize the enormous toll that is paid annually to the ravages of disease. Heretofore, the reported loss of hundreds of millions of dollars from infections made little or no impression, for there were animals enough and to spare; but today, a single death from disease is an appreciable loss to the nation. It is not strange, therefore, that animal owners and economists should ask why there should be such great waste from preventable diseases. At such a time, it seems fitting to inquire into the agencies that are operating to check these losses.

In the past, various efforts have been made to protect animals against infectious diseases but the successful measures have been those centered in the veterinary profession. From the beginning (for Hippocrates, the father of medicine, was a student of animal diseases) veterinarians have been charged with the protection and treatment of animals. In early times, however, they had no knowledge of the infectious maladies and consequently means for combating them have developed in conjunction with the discoveries concerning their nature.

The introduction of departments of veterinary science in our land grant colleges was the beginning of American efforts to combat intelligently infectious diseases. These departments were presided over by men trained in the schools of Europe. They brought to this country the experience of the old world in the protection of live stock and, further, they introduced the experimental method of studying animal diseases. Growing out of this, the Federal Bureau of Animal Industry was established. The organization of state veterinary service; the founding of colleges for research and instruction; the enactment of sanitary laws and others to govern the practice of veterinary medicine followed in rapid succession. From these activities, an American veterinary profession has developed consisting of about 2 to 5 per cent re-

search workers and teachers, 15 to 18 per cent state and government live stock sanitarians and inspectors and 80 per cent practitioners. These constitute the interdependent forces in our warfare against animal diseases.

Prior to this, a few great leaders* of science had appeared who enunciated hitherto unrecognized truths and principles concerning natural phenomena and whose works not only laid the foundation but also guided the development of rational medicine. Their work, together with the evolutions in the auxiliary medical sciences of biology, chemistry and physics, have changed the habit of human thought concerning the origin of plagues, and the naturalness of the infectious diseases has been recognized. As a result, veterinary medicine has been transferred from the realm of empiricism to the domain of applied science.

The changes have been exceedingly rapid.† With the succession in so short a time of so many new and fundamental discoveries, it was difficult for veterinarians to be always on the right side of the facts. We stand, you and I, whether in research, teaching, administrative work or practice, in the midst of a constant evolution of facts and development of truth. As another has put it, "The truth of yesterday is not the truth of today. The truth of today is but the parent of that which is to be tomorrow." Nowhere have the advances been more conspicuous than in the conception of infectious diseases and man's power to overcome them.

The beginning of progress, and so each succeeding advance, was made through the discoveries of research workers. It is the function of teachers to incorporate this new knowledge in their course of instruction, and of practitioners to apply it. The live stock sanitarians have to formulate rules for interherd and interstate dealings, while the inspector protects the human family against the diseases of animals communicable to man. The sequence is a natural one, for it does not presume to apply knowledge before it is acquired. However, the attraction of discovery tends to focus the public eye on research workers and those who enforce the laws growing out of their findings. But the desired

*Among these should be mentioned Virchow and his "cellular pathology"; Darwin and "the origin of the species;" and Pasteur and the "explanation of fermentation and specific etiology." These are fundamental to an understanding of the laws of disease. More recently the theories of immunity by Ehrlich and Metchnikoff are basic in an understanding of prophylactic treatment.

†This can be appreciated from the fact that veterinarians are still living who began their professional career before the cause of a single infectious disease was known; before specific reactions for diagnosis were dreamed of; and before the means of dissemination of epizoötics were anything more than mystery.

results, the minimizing of disease, cannot be obtained without the practitioners, who, from the very nature of their work, naturally become the agency of first importance in applying the principles of preventive medicine.

The veterinary profession is gradually defining its purposes and the ideals toward which it is working. These are subject to change as a result of new discoveries. In the "old days," the aim of the practitioner was to cure the animals suffering from infections. That was all the scientific conceptions of the time allowed him. With the advent of specific etiology, his possibilities extended to their control. Finally, with greater knowledge, a new ideal was conceived, namely, the elimination of epizoötics altogether.

Formerly, the practitioner was helpless in combating animal plagues. Today, he is successful in proportion to his knowledge of them and his ability to apply it. As knowledge increases, empiricism diminishes. The present understanding of disease furnishes the practitioner with a code by which he can determine the procedure to be followed in all cases. As a result, he is the repository and dispenser of the technical knowledge necessary to direct the causes of disease and pestilence out of our flocks and herds. He has become a positive factor in the conservation of animal life. He is to become, and in places he already is, the constructive leader of animal husbandry. Veterinarians are the only men who are trained in the combination of sciences required to interpret the phenomena of animal diseases and to specify methods for their control. While this imposes a heavy responsibility, it is no greater than the opportunities. With every advance in the knowledge of disease, there is a corresponding obligation placed on those who should apply the new truth.

If we analyze the routine of the practitioner, the significance of his position is apparent. He is the first person qualified to make a diagnosis who sees the infected animal. If the proper confidence exists, he is called as soon as there is indication of trouble. It is the practitioner, therefore, who can direct the care of infected animals in time to check the further spread of the virus. An error or delay at this critical moment may prove the beginning of a serious epizoötic. The diagnosis, the isolation, the reporting to officials and the precautionary instructions to adjoining owners of animals are all in the hands of the man who is called first. In these circumstances, the opportunity and the obligation to apply the principles of preventive medicine are his.

He is held by the tenets of the Hippocratic oath to the application of this knowledge. The serious losses that have resulted from the failure of veterinarians to observe these principles are well known. Likewise, you can remember the threatening outbreaks that were prevented, and the herds that were saved, because the practitioner did the right thing at the proper time.

The work of Apsyrtus of Bithynia, the Roman veterinarian in the fourth century, is of interest in this connecton. He differentiated glanders and, by isolation and quarantine, controlled it. He was neither aided nor protected by statutory laws. But, single-handed, a man of science and close observation, he fulfilled the mission of his calling and saved the horses for his country's army. He is a striking example of individualism in sanitary science.

It is not necessary, however, to consult the archives of the ancients for illustrations. I well remember the emphasis Prof. Bang placed on the work of individual veterinarians who came in contact with the herds themselves and who knew and understood the diseases that existed and the dangers that threatened. The success, in Denmark, of the Bang system is due largely to the efficiency of the practitioners who find the infected herds and interest their owners in purifying them. Prof. Bang recognizes, more keenly than any other official of my acquaintance, the duties of the individual members of his profession. He believes that to eliminate infections, the veterinarians must work with the owners, secure their coöperation and instruct them in the principles of prevention. He says frankly that the greatest value of his method is "that it teaches the owners how to keep their herds clean."

We all know practitioners who, by their understanding of the diseases of animals and of the mental attitude of their owners, have the confidence and coöperation of their clients. The problem before us is the suppression of preventable diseases and the sooner we learn to utilize all the agencies, physical and psychological, necessary to accomplish that end, the better. The crucial test of a professional man is his power to work with other men and his ability to bring to his aid the intelligent efforts of those whom he would serve.

The purpose of veterinary education in this country has come to be, as it always was in Europe, to train men in the methods of diagnosis and control of infectious diseases, as well as of the others. We have recognized finally that schools must insist on

training their students in both the theory and application of the sciences of veterinary medicine. The students must be disciplined in laboratory and clinical work. Men who have such preparation, and who possess the professional instinct, know the necessity of early diagnosis, the danger of delay, and that to succeed they must work with natural laws, not against them. They see in practice the necessity for correlation of research, technical instruction and official supervision. These men understand perfectly that there is no technical knowledge required in the administration of serums or vaccines that is not equally applicable to other practices, and that the principles of immunity and prophylactic treatments are integral parts of their professional knowledge.

Further, American veterinary literature is steadily improving. Specialists are developing along many lines and experts in diagnosis, with well-equipped laboratories, are becoming more numerous. It is a source of congratulation that with the greater demands imposed upon practitioners by the live stock industry, there are opportunities for adequate preparation, quite as satisfactory as in other professions. This makes it possible, for those who will, to qualify in the sanitary and control work called for in their respective communities and to do the work either alone or in coöperation with the state or federal government.

The practitioner should take the initial steps in the suppression of infectious diseases locally. It is a part of his professional duty. I desire to mention a few of the many reasons why he should take a deeper interest in the conservation of animals and participate to a greater extent in the supervised sanitary projects.

1. The local practitioners are the advisors, and should be the teachers, of their clients in all matters pertaining to animal diseases. They know the conditions and should give wise instruction.

2. They are near and can be obtained quickly to make the diagnosis and to inaugurate immediately preventive measures. This is all-important, as prevention usually depends on prompt action.

3. Veterinary practitioners are professionally educated men. If it is necessary to call a stranger to apply a modern test or preventive agent, it tends strongly to belittle, in the opinion of the public, the ability of the local veterinarian, and indirectly reflects upon the efficiency of the profession.

4. The communicable diseases, while very important, constitute the minor part of the troubles for which the service of

practitioners is required. To have the affections that cause the greater losses properly attended, there must be competent men in the profession. Can we hope that boys with the education and ability necessary to deal successfully with these subtle problems will enter this profession unless it is so oriented that they can expect to do all of the legitimate veterinary work of their future clients? If the veterinary profession is to stand, its practitioners must be qualified to do the work required of it and be recognized.

5. If the newer projects for the suppression of communicable diseases are successful, to be of value, they must be extended to the flocks and herds generally. Owners may hesitate to hand over their animals for tests or treatment by strangers, without professional representation, when the veterinarians in whom they have confidence and who are competent to do the work are not recognized.

As a long-time laboratory worker, I am not emphasizing the superior opportunities of practitioners in the control of infectious diseases with any thought of disparagement of other and correlated agencies. They each have their place to operate beneficially in our progressively improving system of control. I feel that in the past, at least, there has been a tendency to place too much emphasis on "man-made" laws and tissue reactions, rather than on reaching an understanding of the natural laws governing them and the limitations of specific tests. Not infrequently such failures have created grave suspicion as to the integrity of the work. In sensitive biological reactions, variations may occur due to conditions not fully understood and which perhaps cannot be interpreted with present knowledge. In all of our work, we are dealing with scientific facts and principles that no truly professional man would violate knowingly.

Finally, the practitioners establish the points of contact between the live stock owners and the profession. Like an electric system, if this contact is not well made, the whole battery of useful, technical knowledge, now available, is of little or no use. For this reason, and the great need to conserve our animals, I appeal to practitioners not to be found wanting in their work as sanitarians. I also believe that official veterinarians should cooperate with them as much as possible. This seems to be the only plan that will bring into direct and active operation all of the forces necessary for success.

LAMENESS OF OBSCURE ORIGIN AND SOME OF ITS CAUSES.*

GEO. H. BERNS, Brooklyn, New York.

Among the many difficult problems the practitioner of equine medicine and surgery is called upon to solve, there are few more perplexing than the positive diagnosis in cases of lameness of obscure origin. Upon a correct diagnosis as to the causes and locations, depends the more important prognosis, which may be a means of greatly adding to, or seriously detracting from, a veterinarian's reputation. I have made no new discoveries and have no startling original theories to advance, but I fully believe that this subject is of sufficient importance to merit consideration and a free interchange of views by the gentlemen present. The conclusion arrived at, and the opinions expressed, are chiefly based upon personal observation, experience and a limited knowledge of the anatomy and physiology of the locomotory apparatus of the horse.

Upon post mortem examination and in the dissecting rooms of veterinary colleges, there are many pathological conditions found which during life caused lameness and must have been difficult to diagnose. Dry arthritis, calcification of synovial fringes, incomplete fractures, incipient splints, spavins and ringbones, structural changes in ligaments, tendons, muscles and bones are met with, but form only a small percentage of the many cases seen in daily practice.

Abnormal conditions within the foot are, in my opinion, responsible for at least 50% of all the cases of obscure lameness. In practice, the lame horse, if he does not recover within a reasonable time, is invariably disposed of by the owner, and the veterinarian loses track of him and the chance for a post mortem examination.

In the dissecting room the student is much more interested in the gross anatomy of the foot than in minute pathological lesions in the pododerm or distal phalanges articulation, which might require hours of hard work and diligent search to locate.

To that condition commonly designated as contraction of the foot, producing inordinate pressure upon the sensitive structures within, many modern writers on lameness of horses have

*Paper presented at 55th Annual Meeting, A. V. M. A., Philadelphia, 1918.

given but little attention. I am well aware that many authorities look upon contraction as simply a secondary condition, resulting from lack of functional activity. In other words, if a horse is lame from any cause for a length of time and does not place a proportionate amount of weight upon the foot of the affected limb, the foot or more especially its heels will atrophy and its horny covering sink to a greater or lesser extent. I freely admit that this is the case, but thirty-eight years of continuous practice in a large city among all classes of horses has convinced me that contraction and undue pressure resulting therefrom is the primary cause of very many forms of lameness; some of which are extremely difficult to locate. Consider for a moment the very delicate and complicated anatomical construction of the horse's foot. Consider the vascular and highly organized keratogenous membrane covering all parts of the foot and confined within a very small space between the unyielding horn of the sole, bars, heel and wall on the outside and the pedal bone with its backward projecting wings and more or less ossified lateral cartilages on the inside. Consider the perfect hinge joint (coronæ pedal), the magnificent pulley-like arrangement of the navicular, its ligaments, smooth, gliding surface for the perforans, and its synovial membranous covering. Think of the highly organized coronary cushion, the principal horn secreting structure of the foot, the wonderful dove-tailed union between the horny laminæ of the wall and the delicate podophylous tissue. Reflect upon the many abuses, loss of natural environments and curtailment of functions, domestication has forced upon the horse, and it will be no surprise that the foot should suffer from disease very much oftener than any other part of the entire locomotary apparatus.

The unshod foot, in a normal condition, will expand and contract at every step; contract while momentarily off the ground and expand from one-quarter to one-half inch at its plantar surface when its due proportion of weight is resting upon it. This action not only aids the circulation in a distant part but gives freedom and elasticity to motion. The moment a metal shoe is firmly nailed upon the plantar surface, this freedom of action, as well as the free circulation, is materially interfered with. The horn of the wall, sole and frog, by being artificially protected, and deprived of natural functional activity, loses elasticity, toughness and inherent resisting powers and without any other cause show a disposition to become dry and brittle

and a great tendency to shrink. When this metal plate is made concaved on its upper surface, and worse still, has three elevations from three-quarters to one inch high (called calks), welded to its lower surface, it places the horse practically upon stilts, and throws all his weight upon the wall and deprives the sole and frog of its normal functions. The latter not carrying any weight, raised from the ground and exposed to the drying influence of the air, shrink and become as hard as flint.

In aggravated cases the sole assumes the shape of an arch, the frog atrophies to such an extent that the angles of inflexion at the heels are probably not over one and one-half or two inches apart, where, under normal conditions, the distance between them is three inches or more. The pedal bone, its wings and lateral cartilages, the navicular bone, the broad expansion of the perforans tendons, the bars, the plantar cushion, the velvety membrane of the sole and heels, the sensitive laminæ, one or all of these may be encroached upon to a greater or lesser extent, depending upon the severity of the case.

J. B. Coleman, M. R. C. V. S., and David Roeberge, a New York horseshoer, called attention to this condition as far back as 1876. Coleman expanded the heels by nailing an ordinary shoe (weakened at the toe) way back to the buttress and forcibly dilated the shoe with heels firmly attached, by means of a mechanical apparatus especially made for the purpose. He reported extraordinary success, and in addition to having relieved most all of the ordinary abnormal conditions of the foot, it is said that he claimed some success in the treatment of stringhalt and tetanus.

Roeberge also recognized contraction as a frequent cause of obscure lameness, but laid especial stress upon what he called "the unbalanced foot bone." Owing to the lack of proper care of horses' feet, more particularly the young, he attributed most all of the abnormal conditions met with. He insisted upon having a colt's foot made perfectly level and placed at the proper angle in conformity with the pastern and limb, at least once a month, believing that the slightest deviation from a perfect level would disturb the balance of the pedal bone, interfere with the proper action of the coffin joint and unfavorably affect the horn secreting structures, by increasing or decreasing the circulation at certain points. He was a strong advocate of expanding the heels and invented a spring, called the Roeberge hoof expander,

which afforded a rational, most effective and safe method of dilating contracted heels. It consists of a well-tempered steel spring made to fit into the lateral lacunæ of the frog, and when compressed its sharp pointed ends are pressed laterally into the bars at the angles of inflexion at each side, and by constant and moderate tension gradually produce dilatation of the heels.

In the early spring of 1881 I was called to see a number of lame horses at the old Brooklyn Riding Academy. They had been used during the winter in the tanbark-covered ring as school horses only, and had been ridden mainly by ladies and children; my first impression was that most of them were suffering from navicular disease. They all had overgrown feet, badly contracted and boxy heels, and were shod with plain shoes, some of which had not been removed in two or three months.

I selected three of the worst cases and had them sent to their own horseshoeing establishment. Their feet were cut down to the white line uniting wall and sole, soles and bars pared until they yielded to pressure of thumb, lateral lacunæ thoroughly cleaned out to their very bottom, the shrunken remnant of the horny frogs either entirely removed or brought down to a level with the heels, and the plantar surface made absolutely level, and the heels opened up as deep as possible. Strong Roeberge hoof expanders were inserted, and the bottom of the feet well padded with a heavy layer of oakum and tar held in position by a stout piece of sole leather, over which perfectly fitted plain shoes were applied. When the animals were led out on the street they were hardly able to walk, and the manager of the academy telephoned that night that he had sent me three invalids and that I had returned three perfect cripples, hardly able to stand on their feet. I advised him to have patience for a little while, for I expected an improvement in a few days. At the expiration of three days they moved about as well as they had before the operation, and after that they improved from day to day, and in about ten days they moved practically sound. The remainder of the school horses, about twelve in number, were subjected to the same treatment and all did well with the exception of two, which, while much improved, remained lame, and turned out to be confirmed cases of navicular arthritis. In about three weeks we found the heels of most all of the horses ovelapping the shoes, and it became necessary to remove and widen them at the heels. In a month or five weeks the animals were reshod, the springs removed, feet leveled, loose flakes of

horn removed from soles, heels opened up a little deeper, but bars and frogs were left practically undisturbed. The springs were replaced and if conditions permitted, were set a little deeper in the heels. In another month, when the animals were reshod a wonderful transformation in the shape of their feet had taken place in most all of them. The heels were wide open, new, strong and well developed bars had formed, base of frogs widened and the soles had returned to their normal conditions. This experiment had made such a favorable impression upon the owner of the riding academy that almost every horse in the establishment, some fifty or more in number, were shod with hoof expanders.

I now bought hoof expanders in large quantities and began to use them in all classes of horses, and continued their use until last year, when I retired from active practice.

Up to about fifteen years ago all horses were shod with iron or steel shoes. Most work horses wore heel and toe calks to give them a foothold on our paved streets, and foot troubles, many of which, in my opinion primarily due to contraction, were speedily relieved by leveling their feet and the judicious application of springs. I firmly believe that many cases of incipient navicular disease were aborted by this method of treatment.

In cases where one heel and quarter were contracted, the bar and sole on the affected side only were thinned down. Of late years I have used the Chadwick springs, for they are a decided improvement over the Roeberge springs, as they are much stronger, come in different sizes and admit of regulations of the amount of pressure desired. A full description and illustration of the Chadwick spring is found in Lungwitz & Adams' excellent work on horseshoeing.

In all cases I found a thick oakum pad well saturated with tar and held in position by a leather sole indispensable.

Since the introduction of the rubber pad, which permits sole and frog pressure and does not interfere with the natural expansion and contraction of the foot, above referred to, foot lame horses are not as plentiful, but horses pulling heavy loads are still shod with calks, and as long as the stereotyped three calked shoe remains in use, contraction of the hoof in its various forms will be met with.

My reason for stating that probably 50 per cent. of all the obscure cases of lameness were located in the foot is based upon the fact that in a large number of instances absolutely nothing abnormal could be detected in the foot, but which gave a posi-

tive reaction to local anesthesia, were frequently relieved by judicious expansion and perfectly level shoeing.

This, to my mind, proves that the slightest degree of inordinate pressure of any part of the keratogenic apparatus upon the sensitive structures within will produce lameness if continued for a sufficient length of time; whether due to contraction, abnomal height of heel, toe or any other part of the plantar surface.

Having already occupied too much of your valuable time, I will not refer to any of the other causes leading to obscure lameness, having in a measure covered the most important one.

STALLION ENROLMENT.*

C. D. McGILVRAY, Toronto, Canada.

The enrolment of stallions for public service has for its attainment the improvement of horse breeding through a standard of qualification for sires.

To accomplish the desired purpose the enrolment requirements must needs be restrictive in character so as to eliminate from public service stallions of undesirable type and poor conformation. Also to discourage the use of unsound stallions likely to transmit their defects and to prevent the use of stallions other than those of recognized pure breeding.

It would appear that the origin of legislation leading to the enrolment of stallions in Canada was largely due in the first instance to the initiative of Dr. J. G. Rutherford. He introduced in 1893 an act entitled the Horse Breeders Lien Act, which was passed by the Manitoba Legislature, of which he was then a member. The essential feature of this act was that it only gave recognition to pure bred stallions registered in a recognized stud book. In the case, therefore, of a pure bred stallion it provided for a lien registered on his get for a period of one year after their birth, and in the event of the service fee not being paid it entitled the owner of the stallion to seize and sell the colt to liquidate the amount due for service. To avail himself of this privilege the stallion owner was required to record his stallion in the department.

While this act did not provide for compulsory enrolment or an inspection of the stallion, nevertheless it paved the way for future legislation of this nature.

*Paper presented at 55th Annual Meeting, A. V. M. A., Philadelphia, 1918.

Further enactments in Manitoba requiring the enrolment of stallions for public service were promulgated from time to time until, during the year 1916, the recent Horse Breeders' Act was made operative. As a basis of operation the act now provides that the owner of any stallion offering for public service in Manitoba shall obtain from the Department of Agriculture annually a certificate of enrolment. Also that every importer or breeder before offering a stallion for sale in Manitoba must enroll such stallion.

Applications for enrolment are required to be accompanied by a bona fide pedigree certificate of registration and certificates of enrolment can be issued only for stallions which are pure bred and registered in an approved stud book recognized by the Canadian National Live Stock Records.

In the case of stallions imported from the United States, not as yet recorded in the Canadian Records, they must be recorded in one of the following associations and have authentic certificates of registration:

For Percheron Horses—Percheron Society of America, Chicago, Ill.

For Clydesdale Horses—American Clydesdale Association, Chicago, Ill.

For Hackney Horses—American Hackney Horse Society, New York, N. Y.

For Belgian Draft Horses—American Register of Belgian Draft Horses, Wabash, Ind.

For Shire Horses—American Shire Horse Stud Book, Wenona, Ill.

For Thoroughbred Horses—American Thoroughbred Stud Book, New York, N. Y.

For Shetland Ponies—American Shetland Pony Stud Book, Lafayette, Ind.

For Welsh Ponies—American Welsh Pony and Cob Stud Book.

For Suffolk Punch Horses—American Suffolk Horse Stud Book, Jamesville, Wis.

For Morgan Horses—American Morgan Register, Middlebury, Vt.

For Saddle Horses—American Saddle Horse Register, Louisville, Ky.

For French Coach Horses—American French Coach Horse Register, or the French Coach Horse Stud Book of America, Chicago, Ill.

For Standard Bred Horses—American Trotting Register, Chicago, Ill.

This provision effectively precludes the enrolment of grade stallions or those of unrecognized breeding.

The act also requires all stallions to be examined by one or more specially authorized veterinary inspectors who are registered members of the Veterinary Association of Manitoba; this places the inspection work in the hands of the veterinary profession. This inspection is necessary for the first enrolment and every three years thereafter, until the stallion is nine years of age. The examination deals with the breed-type, conformation and soundness of the stallion and its desirability as a sire, in accordance therewith. These particulars are embodied in a certified report made by the veterinary inspector and transmitted to the Board of Enrolment for consideration and approval. The board consists of three members, one of which is a veterinarian, the other members representing the Horse Breeders' Association and the Department of Agriculture, respectively. The board carefully consider the inspectors' reports and examine the pedigree certificates of registration and, in turn, recommend to the department their approval for enrolment or otherwise.

The board has the power to reject by withholding their approval of enrolment in the case of stallions considered to be unworthy as to breed-type and conformation and for unsoundness. The decision of the board for enrolment or otherwise is endorsed by them on each report, together with their recommendation as to the form of certificate to be issued by the department.

The following diseases are specially named in the act as being unsoundness of an hereditary nature: Bone Spavin, Ringbone, Navicular Disease, Chorea, Periodic Ophthalmia and Cataract, also Bog Spavin, Thoroughpin, Curb and Sidebone, the latter conditions particularly when accompanied by defective conformation or structural weakness. The omission of Roaring from the list of scheduled diseases is owing to the fact that its hereditary nature is still a disputed question.

With regard to the form of enrolment certificates granted, four schedule forms are provided, designated respectively as Schedule A, B, C, and D, as follows:

Schedule A is made use of for stallions of recognized pure breeding which have been examined and are considered worthy as to breed-type and conformation and found to be free from unsoundness of an hereditary nature, as set forth in the act. This statement is embodied in the enrolment certificate issued.

Schedule B is made use of for stallions of recognized pure breeding which have been examined and considered worthy as to breed-type but found to be affected with one of the forms of unsoundness set forth in the act. Indication of the exact form of unsoundness is embodied in the enrolment certificate issued.

Schedule C is an interim certificate of enrolment, which may be used for stallions of recognized pure breeding and considered to be somewhat unfavorable otherwise, but which are required for temporary service in outlying districts, or until better stallions become available for use in the district.

Schedule D is also an interim certificate of enrolment made use of for stallions of recognized pure breeding, for which application for enrollment have been received, but which are awaiting examination by the inspector. Upon examination being made, and the inspector's report received and considered, certificate of enrolment is issued in the form of Schedule A, B, or C, as the case may require.

When a stallion is rejected for enrolment by the board, and the owner is not satisfied with the decision, provision is made whereby he may protest. In such cases the protest requires to be accompanied by a deposit of thirty-five dollars and a declaration by the owner as to his belief that the stallion in question is entitled to enrolment. These evidences of good faith being furnished by the protestant, entitles an examination of the stallion by an independent arbitration board composed of three experts, one of which is appointed by the department, one by the owner, and the third mutually agreed upon by the two first appointed.

Where the protest is based on a question of unsoundness, the arbitration board requires to be composed of three qualified veterinary surgeons of good repute. Should the decision of the arbitration board be that the stallion in question is entitled to enrolment under the act, the expenses incurred are paid by the department and the deposit money is returned to the owner. If the decision of the arbitration board be otherwise, the expenses incurred are to be paid by the person making the protest out of the thirty-five dollars deposited.

Where its various provisions are complied with, the act entitles the owner of a stallion to file a lien on the foal gotten by such stallion, and, at a fixed time, to seize and sell the foal at

public auction to obtain payment of unpaid fees. The course of procedure in these cases, and the statement of lien, are specifically outlined in this act, thus obviating the incurrence of legal expense.

The act also provides that the owner of any stallion offering for public service in Manitoba shall keep posted, in certain places during the breeding season, a true copy of the certificate of enrolment of such stallion. It is further provided that the owner of an unenroled stallion shall not have route bills or breeding cards printed or posted, nor shall he charge or receive any service fees.

Violations of the essential provisions of the act are punishable by fine on conviction before any two justices of the peace or by a police magistrate.

Coincident with the adoption of advanced legislation, such as the Horse Breeders' Act of Manitoba, undoubtedly many problems naturally appear for solution. While the horse breeding industry is well advanced throughout the older settled districts, there is still a comparative shortage of stallions of good merit in the newly settled districts, a condition to be expected.

To adopt a standard of qualification in breed-type and conformation suitable for all districts in the province is by no means an easy matter. The selection of type in most breeds has heretofore been largely a matter of inclination which varied according to the different fancies of the individual.

As time advances and the number of stallions increases there will naturally follow a wider basis for selection and a more stringent and uniform standard of qualification can ensue. This is important, as no great progress can be made so long as the breeding stock consists of individuals of poor type and defective conformation.

While the present act has only been in operation for a period of two years, it has already eliminated from public service the grade stallion. Material progress is being made on a good foundation, and if consistently maintained beneficial results to the horse breeding industry in Manitoba should be accomplished through the Enrolment and Inspection of Stallions.

Dr. M. V. Spingstun has been transferred from the work of tick eradication, Baton Rouge, La., to such work on the Fort Worth, Texas, force.

THE HOG IN RELATION TO MUNICIPAL GARBAGE.*

C. B. PALMER, Easton, Pennsylvania.

The duty that lies plain is not always the most pleasing. Duty, I take it, is the manner of doing what one should do rather than what he desires to do. Sometimes the two are concordant—more often they are not. In time of war, duty, as an eminent issue, is written large. The love for one's country stands on a level with one's love for his family. Many of us have a tendency to accept the security and benefits of our country without a grave discernment of promise or duty. However, in our present need this obligation is being met.

Veterinarians are as keenly alive to it as others. For the first time the American people, and therefore the allied nations as a whole, are facing a possible occurrence of a serious shortage of food and clothing. The position is understood, but the Government must have men for its burdens overseas, and it must have munitions, clothing and food for its soldiers. To furnish the army and the people at home with the necessary animal products, there must be a greater efficiency; not only in obviating losses from disease but in production, and in my opinion both are functions of the veterinary profession. In his relation to the development and conservation of our live stock industry, the veterinarian occupies a most momentous and unequaled position. The opinion of live stock owners, various legislative bodies, and others, towards the profession, is dependent a great deal upon the veterinarian himself.

I have no thought to-day, gentlemen, of giving you a scientific discourse, but rather to bring to you a thought which I dare say is no new one to many of you, and that is "The Hog in Relation to Municipal Garbage."

Some time ago the United States Department of Agriculture sent out letters to municipal authorities urging them to have their garbage analyzed, as it would convince the most skeptical of the vast amounts of bread, meat and edible fats that found their way to the garbage pail. In fact, it pointed out that annually tons of valuable foodstuffs for animals are lost to the food supply of the nation by the usual garbage reduction and incineration methods. Reduction has been profitable because the American garbage pail is rich in fats, averaging 4 per cent.

* Address before the 55th Annual Meeting, A. V. M. A., Philadelphia, 1918.

before the war, whereas German garbage rarely showed 1 per cent.

As the saving or thrift idea grows, there will be less and less fats thrown away, and this will make reduction of garbage for the recovery of oils hardly worth while. But, even if all fats are eliminated and all waste of bread and cereal and meats is reduced to a minimum, city garbage will still contain, in the form of parings, plate scraps and trimmings, materials which should be conserved and used as feed for hogs and poultry. Approximately fifteen to twenty pounds of garbage are required per day for a fattening hog of 125 to 200 pounds, depending on the character of the garbage. It has been estimated that four tons of garbage are required to grow a pig to 200 pounds, the feeding period extending from ten to twelve months. But as long as people are so careless as to allow such foreign substances as waste paper, tin cans, and broken crockery and glass to get into their garbage, it can never reach its full usefulness. Hogs are not reckoned fastidious, but even they can hardly thrive on a diet which contains broken electric light bulbs and phonograph needles.

In the end it all comes down—as does everything else in war times—to the necessity of widespread individual effort. It is only by such effort that large war problems are to be solved, and the matter of garbage utilization is such a problem, for it concerns the salvage of valuable resources for industry and food which might otherwise be lost.

The first question to be asked from a sanitary point of view is whether garbage-fed pork is fit for human food. The very fact that the United States Department of Agriculture comes out boldly and advocates this feeding method (printing Circular No. 80, entitled, "Disposal of City Garbage by Feeding to Hogs"), hardly makes an explanation necessary. Experts have investigated this subject from many angles, and for many years. They have all come to the same conclusion, that there is no danger to man from this system of hog feeding. In my opinion, hogs do not become diseased primarily because they are fed on garbage, but rather this is due more to the conditions under which they are kept. According to a statement issued by the City of Worcester, during one year 2,276 hogs were sold to a packing company, all being fed entirely on the city garbage. Eleven were condemned by United States meat inspectors. This was less than one-half of 1 per cent.—a loss much less than among

inspected hogs coming to the same packers from farms of the West. We are told by Hon. Gifford Pinchot, at Easton, that the only way to get fats and meat was to raise pigs, feeding them corn. To do that you are simply converting one kind of food into another.

Easton had a few men who saw the real need for more fats and meats, and about this time Dr. Edward Hart, professor of chemistry at Lafayette College, suggested to our Easton Rotary Club that we feed our city garbage to pigs and that they appoint a committee to investigate and report on what could be done. I was fortunate enough to be placed on this committee.

It makes me laugh now to think what the committee had to go through before the proposition was taken up by the city. At our weekly Rotary luncheons our appearance was always an occasion for the members to either hold their noses or grunt like pigs, but I had in mind the old adage, "He laughs best who laughs last." I can say to you to-day we are laughing last and best.

The committee found that the hardest work was to get the city commisioners interested or to think seriously of the project. One of them, who at the start, was very bitter against the city piggery, is now, since he has seen the piggery become systematized, so enthusiastic that he is receiving complaints on account of spending too much time watching the pigs grow. Once convinced, our Council acted promptly. They bought an old wornout farm of 100 acres, three miles from the city, erected temporary pens and began to buy pigs and feed them the city garbage. To the average man this seems to be all that is necessary to raise pigs.

Our city fathers were warned by me not to go and buy pigs, without first being sure that they were healthy and that they came from healthy herds. In spite of this, they went out and bought and placed in the herd already on the farm pigs affected with hog cholera. It was not long before I was called to make a diagnosis, rather a post mortem. The findings proved to be hog cholera. I at once wired Dr. T. E. Munce, acting State Veterinarian, and he promptly sent Pennsylvania State serum by special messenger, and I injected the entire herd, their temperatures ranging from 103° to 107°. It was less than twenty-four hours from the time the diagnosis was made until the serum was in the pigs. The result of this quick action was that we only lost two. I am giving the serum the credit of saving the City of Easton

$1,062, which was the amount paid for the pigs that were on the farm at the time of the outbreak.

A client, a farmer, who bought pigs at the same time, and from the same farm as the city, lost, from June 2d to June 9th, 3,290 pounds of pig. He did not use serum, nor did he consult a veterinarian until the ninth day after he first noticed symptoms of disease in the herd.

As I said before, the City of Easton bought a wornout farm, and our idea is to raise outdoor pigs. They are utilized in cleaning off the scrub from waste land, and by so doing will improve it. Only the large stumps will remain after a season. About forty pigs to the acre are allowed in each compartment, which compartments are fenced off with four-foot hog wire, with stakes driven in as posts. Arrangements have been made so that the different herds can be driven into the feeding platform in an adjacent compartment and afterwards returned to their own runs. The feeding is done on platforms mounted on skids so as to allow the same to be moved when the ground around the platforms becomes foul. Platforms are shovel-cleaned daily, and the material is utilized on the adjacent farm as fertilizer, being turned under in the furrow. The colony houses are made portable and on skids; knockdown construction. After a suitable time the old ruins and feeding yards are plowed under and seeded down—the pigs having been transferred to fresh ground.

The American Army is turning camp waste into dollars. At many of the camps the officers and men, like the civilian population of the country, have taken a voluntary interest in conservation and the War Department is encouraging it in every way. The camps are annually saving Uncle Sam $1,500,000 in waste and garbage, increasing the annual output of pork by approximately 20,000,000 pounds, with a market value exceeding $3,000,000.

Gentlemen, our piggery is only in its infancy, an experiment, if you will. I will feel it a favor if any of you who have had experience in this line will tip us off. I have simply explained our plans, hoping that they might persuade or interest a sufficient number of the members present to go and do likewise, with this thought uppermost—"make the hog help win the war."

Dr. J. R. Love, formerly of the Baton Rouge, La., force, has been called into the service, being commissioned Second Lieutenant and assigned to Camp Lee, Petersburg, Virginia.

FOOD SUPPLY PROBLEMS AND THE VETERINARIAN'S RESPONSIBILITY.*

L. M. Steckel, New York, N. Y.

We are in the midst of a great world conflict to vindicate the principles of right and justice to all the peoples of the earth, and, therefore, it is our paramount duty to invest our might and main in the accomplishment of this noble mission.

Many factors are immediately concerned in the successful prosecution of this war—men, ammunition, ships, clothing, and food. Of these, the food supply problem has engaged the attention of the entire world. Do you realize what a stupendous task it is to provide an adequate food supply to our forces overseas? But this is not all. Not only must we assure the full provisioning of all our own military forces and the civil population at home, but we are also pledged to share our food resources with our heroic allies, and even give our part to the hungry, breadless neutrals. And, not alone must adequate provision be made for a continuous food supply, but in order to maintain the health and vigor of the people, the food must be sound, safe, wholesome and nutritious.

In a recent agricultural bill before our Congress, an appropriation, as a war measure, having been asked to cover expenses to be incurred in the extermination of prairie dogs and other predatory animals in the West and Southwest, a question was raised by a timid Congressman as to what prairie dogs in Kansas have to do with winning the war in Flanders. Although the humor of a question of this kind is perfectly apparent, I wonder whether you sense the deep and fundamental importance that exists in the connection between prairie dogs in Kansas and winning the war in Flanders. Let me inform you that the live stock losses due to the ravages of these predatory animals are appalling, and we are penalized with the diminution of much needed beef and mutton. In the State of New Mexico alone the annual loss is 34,000 head of cattle and 165,000 sheep. This is equivalent to destroying a dozen sheep on each of fourteen thousand farms.

Perhaps the greatest loss which the agricultural and live stock interests sustain, namely, a total of $200,000,000 annually,

*Address delivered before the Veterinary Medical Association of New York on October 2, 1918.

is due to the many contagious and infectious diseases. This is a high toll indeed when you consider the reduced food supply entailed thereby. The shortage of fat, wool and leather is assuming serious proportions. We produce annually about one and a half billion dozen eggs, and it is estimated that about one-fifth of this is wasted and spoiled on the farms and on the way to the consumer. The food value of this waste is enormous. Again, our total annual production of dairy and creamery butter amounts to about 1,650,000,000 pounds, which releases about 33,046,000,000 pounds of skim milk and buttermilk, and we find most of this valuable food is wasted. The food thus lost and wasted would be sufficient to feed the people of Belgium and Serbia for more than a year.

By authority of the United States Food Administration it is stated that since the war began there has been a world decrease in food animals of about 28,000,000 cattle, 55,000,000 sheep and 33,000,000 hogs, and is continuing from day to day. The reduction of food animals involves not alone the supply of meat and dairy products, but also fats, wool, leather, and other by-products. Even after the war the European countries will necessarily be compelled to rely upon us for a long time to furnish them large quantities of animal products, and their depleted herds will have to be replenished as rapidly as possible. It is then our duty to produce food for these peoples.

Of equal importance with food production is the problem of food preservation and conservation. At this time, particularly when our need is so great, it is a flagrant crime to waste an ounce of food or to neglect its preservation and conservation. Salvage must be our watchword. Our military authorities have taken concrete steps to guard against any possible food waste at the camps and cantonments. Through experiments conducted by nutrition experts it was found that the waste of food per man per day could be reduced from over one pound to less than a half-pound. On this basis for an army of two million men the annual savings would amount to over forty million dollars.

Aside from these, there is still another vital question which requires our serious attention. I refer to Child Conservation. Upon the infants and the children of to-day we must depend for the reconstruction and rehabilitation of a world now disorganized and torn by war. Happily, there are a number of unselfish men and women in each community, Child Welfare Committees, working in coöperation with the health authorities

towards the better care of the children in the matter of a proper food supply and the prevention of disease.

What are the responsibilities of the veterinarian in these problems? The veterinarian in his role of animal economist plays an important part in this world drama. His stage and sphere of activity embraces a large and varied repertoire. Whether in the army or civil life, he aids in the protection of the lives of men by guarding against the communicable diseases from animals to humans; he is the guide and advisor to the farmer, the breeder, and army remount staff, and above all he is the expert in the treatment of the sick and wounded of our dumb animals.

The veterinarians are fully aware of their responsibility to the public. It is but too early to foget their indefatigable work in the recent outbreak of "foot and mouth disease" and how completely they banished that scourge from our shores. They have pledged their services in the great crusade for the elimination of tuberculosis from our dairy herds, and they are seriously engaged in the eradication of contagious abortion, anthrax, blackleg, scabies and Texas fever from our cattle, the elimination of glanders, influenza and mange from our horses, the control and reduction of hog cholera and swine plague, and the extermination of pests and infestations among our sheep.

In the field of meat and milk hygiene, the veterinarian is doing his full duty in guarding against the possible release and consumption of unsound meat and dairy products. From the time the animal leaves the farm or ranch to the time the meat is ready for the home or mess kitchen it is under the watchful eye of the veterinary inspector. Up to date, of the millions of tons of meats and meat products supplied to our armies, practically no complaint has been made against the inspection forces, nor have they found any putrid or decomposed meat which came from inspected establishments. What a wonderful comparison with the conditions that existed in the war of 1898. The Federal Bureau of Animal Industry, with its super-efficient organization, deserves special credit for its lead in these epoch-making achievements.

We must, however, exert our efforts still further, and with your permission I shall point out some of the lines along which the veterinarian may render additional aid: He should give his expert services in the matter of increased production of food and food animals, the improvement in the breeding of farm live

stock, the proper care and feeding of our domestic animals, the increased production of fats, wool and leather, to stimulate an interest in dairy sanitation and an increased milk production; he should take a leading part in the health and welfare movements in his community, and, above all, he should give his very careful attention to the cure and treatment of the sick and the eradication of the infectious and contagious diseases among our animals.

I cannot leave without a word of tribute to the Army Veterinary Corps. From a mere handful of men, it was necessary to expand the veterinary service to meet the unprecedented conditions in a war of such magnitude. With patriotic fervor they came forward, from the classroom and field, teacher and practitioner, to joint the Army of Liberation. Now, as a Division of our great Army Medical Department, the Veterinary Corps, here and across the sea, is creditably fulfilling its obligation. The good work and efficiency of the men have already called forth high praise from our and the allied army commanders.

And, as the veterinarians in the army service are doing their full share towards the final triumph of winning the war, the veterinarians in civil life, in their many and varied activities, are adding their mite to aid this great cause. Their coöperation with the medical fraternity in the promotion of health and sanitation, and with the agricultural leaders in the development of a bigger and broader agriculture, to the end that a safe and sufficient food supply may be assured the people in this great land, is a worthy contribution to the progress of the World and the welfare of Humanity.

STANDARDIZATION OF BLACKLEG VACCINE.*

LEONARD W. GOSS and JOSEPH P. SCOTT, Kansas Experiment Station.

Horses, when injected with 20 to 120 mil. subcutaneously, or with 50 to 400 mil. intraveneously of B. Chauvæi in 5 to 7 doses at intervals of seven days, will produce a serum which has excellent protective properties against blackleg virus. The serum will also effect a cure when injected into cattle in the early stages of the disease.

Tables I and II show a test of the serum from horses 2, 18, 27, 25, 26, 3, 15, 6, 24, 25, 26, and one normal horse. Twenty-five mil.

*Paper presented at 55th Annual Meeting, A. M. V. A., Philadelphia, 1918.

of blood was drawn from the jugular vein of each horse nine days after an injection of culture of B. Chauvæi. After the clot had formed it was pressed to one side with a needle and .55 mil. of the clear serum was withdrawn and injected into each of the three guinea pigs. Fifteen hours later each of the guinea pigs was given 125 mg. of powdered muscle from a blackleg lesion of a calf. In all cases when none of the three guinea pigs died within two days, the horse was bled upon the third day after the test blood was drawn. This was the case with horses 27, 25, 26, 3, 6, 25 and 26, while horses 2, 18, 15, 24 and the normal were not bled.

The 125 mg. of muscle is about 50 mld. as the mld. of the muscle powder used was 2.5 mg. This shows that .55 mil. of the horse serum will protect a guinea pig against blackleg when injected with about 50 mld. of virus, administered fifteen hours following the serum. It is shown in Table II that the serum from a normal horse failed to protect any of the three guinea pigs for even one day.

Table III is a test of serum 36. This serum contains the serum taken from seven horses which have passed according to Tables I and II. Three guinea pigs were each given .05 mil. of the serum and fifteen hours later they were each given .5 mil. of culture virus. All three of these guinea pigs lived. Three guinea pigs were given .02 mil. of serum and fifteen hours later they were each given .5 mil. of culture virus. But one of these pigs lived. The other two died upon the second day. Three guinea pigs were given .01 mil. of serum and fifteen hours later they were given .5 mil. of culture virus. One of these died upon the first day and two upon the second. One guinea pig which did not receive serum was given .05 mil. of virus and one was given .1 mil. of virus. Each one of these guinea pigs died upon the second day. This shows that .05 mil. of this virus is sufficient to kill an unprotected guinea pig. As .05 mil. of virus will kill a normal guinea pig and .05 mil. of immune serum will protect a guinea pig against .5 mil. of virus, it would seem to indicate that immune serum in quantities of .55 mil. will protect guinea pigs against 110 mld. of culture virus.

In Tables I and II it shows that .55 mil. of immune horse serum will protect against 50 mld. of muscle virus at the time when the animal is test bled. Table III would seem to indicate that the blood upon the day of bleeding was much more potent than upon the day of testing. However, there may be some difference in the reaction between the muscle virus and the pure

culture virus, as the muscle virus undoubtedly contains other organisms besides blackleg. The high protective properties of serum, in the guinea pig, against the blackleg virus will account for the curative properties of serum when used upon cattle during the early stages of blackleg infection.

A part of the aggressins and filtrates used in the following tests were purchased in the open market and in testing they have been used indiscriminately. The results are shown in Tables IV, V, VII and VIII.

Table V shows that 24 guinea pigs were used in testing three filtrates, eight pigs to each filtrate. They were given doses from 2 to 5 mil. Eleven days following they were each given 5 mld. of culture virus. This table shows that 50 per cent of the guinea pigs in the entire test died of blackleg. Of the pigs receiving 2 mil. 33 per cent were protected; of those receiving 3 mil. 50 per cent were protected; of those receiving 4 mil. 50 per cent; of those receiving 5 mil. 66 per cent. This would indicate that the 5 mil. of filtrate gives a little more protection than 2, 3 or 4 mil.

Table IV shows that 24 guinea pigs were used in testing three aggressins. Eight guinea pigs were used upon each aggressin, two of which were given 2 mil., two were given 3 mil., two were given 4 mil., and two were given 5 mil. Eleven days afterward they were each given 5 mld. of virus. Of the entire number of pigs receiving 2 mil. 33 per cent were protected; of those receiving 3 mil. 66 per cent were protected; of those receiving 4 mil. 50 per cent; and of those receiving 5 mil. 50 per cent. On the whole, 50 per cent of the guinea pigs were protected. This table would seem to indicate that 3 mil. gave more protection than any of the other size doses.

To summarize the results shown in Tables IV and V, of the 24 guinea pigs with which aggressins were tested, 50 per cent died; also of the 24 guinea pigs with which filtrates were tested, 50 per cent died. As a means of testing or standardizing aggressins and filtrates it would seem that this method is not very efficient, as there is so little difference in the protective properties of 3 and 5 mil. that it would make it difficult to detect the variation of the different products which were tested by this method. It would seem in some instances one product might have twice the protective properties of another and still show a smaller degree of protection upon this test. It will be noticed that these guinea pigs have received from 1/5 to 5/5 of a dose of vaccine required to protect cattle and that 5 mld. of virus have killed

50 per cent. This would seem to indicate that the highest degree of active immunity developed in the guinea pig is of a rather low degree. On that account it probably is possible to produce nearly as much immunity in a guinea pig with 3 mil. as with 5 mil. of aggressin or filtrate. The volume of the dose of all concentrated vaccines was brought up to 5 mil. by the addition of sterile water.

The material used in Table VI was a pure culture of B. Chauvæi which was washed by centrifuging three times, then sufficient water was added to bring the material up to the original volume. This shows that the guinea pigs receiving .1, .2, .4 and .8 mil. lived, while the guinea pig receiving 1.6 mil. of washed culture died; and the guinea pig receiving .05 mil. of the unwashed culture died. Accordingly, it takes 31 times as much of the washed culture to kill a guinea pig as of the unwashed culture, which would indicate that the culture contains a toxic or aggressive substance and that, through washing, the greater portion of this toxic or aggressive substance has been removed.

Table VII shows a test of five products—A, B, C, D and E—part of which are aggressins and part filtrates. In these tests all guinea pigs were injected with 1 mil. of normal horse serum. Five guinea pigs were used upon each product. To each one of the guinea pigs, on the following day after having received the 1 mil. of normal horse serum, was given 1 mld., of virus and 1, 2, 3, 4 and 5 mil., respectively, of aggressin. Of the five guinea pigs given A those receiving 4 and 5 mil. died; of the guinea pigs given B, the one receiving 4 mil. died; of the guinea pigs given C, the one receiving 4 mil. died; of the guinea pigs given D, the one receiving 4 and 5 mil. died; of the guinea pigs given E, those receiving 2, 3, 4 and 5 mil. died. In this test, the guinea pigs receiving the larger doses died; this would indicate that there was an aggressive action in these products which has a neutralizing action upon the serum. Thus the serum is not able to protect the guinea pig against the virus given. If this is the case, an aggressin which contains a large amount of aggressive substance will kill the guinea pigs. On the tests A, B, C, D and E the conclusion is that E should be a more efficient product for immunizing than any of the others.

Table VIII shows a potency test of the serum of a normal horse. In this test it is noted that .5 mil. of the serum when injected into guinea pigs protected those which had received .1, .2, .4, .6, .8 and 1. mil. of culture virus injected fifteen hours after the serum was injected. This shows that .5 mil. of normal horse

serum will protect against 1. mil. of virus, which is equal to 10 mld.

Accordingly, 1. mil. of normal horse serum should protect against 20 mld. of culture virus.

Referring to Table VII it will be seen that the guinea pig which received 1 mil. of normal horse serum and 1 mld. of virus and 2 mil. of the aggressive product E, died. According to Table VIII, 1 mil. of normal horse serum protects a guinea pig against 20 mld. Therefore, the mld. value of 2 mil. of E would be 20 less than the 1 mld. of culture virus injected at the same time, or 19 mld. Accordingly, 5 mil., or a calf dose, would contain 2.5 times as much, or 47.5 mld., which would be the aggressive value of E. C seems to have the least action, as 5 mil. was of sufficient strength to kill a guinea pig; therefore, it would have a value of 19 mld. The old powder vaccine on the market has a value of about 1 mld. to each dose; therefore, the aggressive products in Table VII should be from 19 to 47.5 times as aggressive as the powder vaccines.

CONCLUSIONS.

1. Serum can be made from the horse, by injecting cultures of B. Chauvæi, which will protect guinea pigs from blackleg, when they are injected with 0.5 mil. of culture virus (10 mld.) if they receive .02 mil. of the serum fifteen hours previous to the injection of virus.

2. Aggressins and filtrates in quantities of 2-5 mil. will produce an active immunity in eleven days, which will only protect 50 per cent of the guinea pigs when given 5 mld. of culture virus.

3. A normal horse produced a serum which was capable of protecting guinea pigs against 10 mld. of culture virus when injected with .5 mil. of the serum fifteen hours previous to the injection of the virus.

4. The pathogenic properties of B. Chauvæi cultures are greatly reduced by washing.

5. Blackleg aggressins and filtrates have an aggressive action which seems to neutralize the protective action of serum.

GENERAL CONCLUSIONS.

The laboratory standardization of anti-blackleg serum is a comparatively simple procedure. On the other hand, the standardization of aggressin and filtrate is somewhat more difficult, as

the highest active immunity which can be produced in guinea pigs is of a low degree. However, the neutralization of the serum by the aggressin or filtrate seems to give a method by which the value of the product may be measured.

TABLE I.

TEST OF HORSES FOR IMMUNE SERUM.

Horse No.	Guinea Pig		Serum Injected		Muscle Virus Injected		Results	
	No.	Weight, Grams.	Amount, Ml.	Date	Amount Mg.	Date	First Day	Second Day
2	414	500	.55	9/17	125	9/18	3X	Dead
	415	500	"	"	"	"	2X	2X
	416	470	"	"	"	"	2X	2X
18	417	500	"	"	"	"	Dead	
	418	300	"	"	"	"	2X	2X
	419	450	"	"	"	"	2X	2X
27	420	360	"	"	"	"	2X	2X
	421	300	"	"	"	"	2X	2X
	422	560	"	"	"	"	2X	2X
25	484	270	"	9/24	"	9/25	2X	2X
	495	360	"	"	"	"	2X	2X
	496	250	"	"	"	"	2X	2X
26	497	250	"	"	"	"	2X	2X
	498	250	"	"	"	"	2X	2X
	499	300	"	"	"	"	2X	2X
3	483	560	"	"	"	"	2X	2X
	494	250	"	"	"	"	2X	2X
	485	250	"	"	"	"	2X	2X
15	486	350	"	"	"	"	2X	2X
	487	250	"	"	"	"	2X	2X
	488	250	"	"	"	"	2X	Dead

1X, 2X and 3X indicate the degree of the lesion.

TABLE II.

TEST OF HORSES FOR IMMUNE SERUM.

Horse No.	Guinea Pig		Serum Injected		Muscle Virus Injected		Results	
	No.	Weight, Grams.	Amount, Mil.	Date	Amount Mg.	Date	First Day	Second Day
6	619	300	.55	10/22	125	10/23	2X	2X
	620	330	"	"	"	"	2X	2X
	621	360	"	"	"	"	2X	2X
24	622	420	"	"	"	"	3X	3X
	623	400	"	"	"	"	3X	2X
	624	300	"	"	"	"	3X	Dead
25	625	240	"	"	"	"	2X	2X
	626	300	"	"	"	"	3X	2X
	627	270	"	"	"	"	2X	2X
26	628	300	"	"	"	"	2X	2X
	629	360	"	"	"	"	2X	2X
	630	330	"	"	"	"	3X	2X
*	655	270	"	10/29	"	10/30	Dead	
	656	270	"	"	"	"	Dead	
	657	270	"	"	"	"	Dead	

*Normal.

TABLE III.

POTENCY TEST OF BLACKLEG SERUM.

Guinea Pig		Serum Injected		Culture Virus Injected		Results	
No.	Weight, Grams.	Amount, Mil.	Date	Amount, Mil.	Date	First Day	Second Day
60	300	.05	2/14	.5	2/15	OK	OK
61	360	"	"	"	"	OK	OK
62	420	"	"	"	"	OK	OK
63	330	.02	"	"	"	1X	OK
64	330	"	"	"	"	3X	Dead
65	300	"	"	"	"	3X	Dead
66	390	.01	"	"	"	Dead	
67	390	"	"	"	"	OK	Dead
68	330	"	"	"	"	3X	Dead
75	240			.05	2/15	1X	Dead
76	270			.1	"	1X	Dead

TABLE IV.

POTENCY TEST WITH AGGRESSINS.

AGGRESSIN A.

Guinea Pig		Aggressins Injected		Virus Injected		Results
No.	Weight, Grams.	Amount, Ml.	Date	Amount, Mld.	Date	
313	720	2	4/9	5	4/20	OK
314	360	"	"	"	"	Dead
315	390	3	"	"	"	OK
316	390	"	"	"	"	OK
317	360	4	"	"	"	Dead
318	360	"	"	"	"	Dead
319	390	5	"	"	"	OK
320	360	"	"	"	"	Dead

AGGRESSIN B.

363	360	2	4/16	5	4/27	Dead
364	360	"	"	"	"	Dead
365	300	3	"	"	"	OK
366	360	"	"	"	"	Dead
367	360	4	"	"	"	OK
368	270	"	"	"	"	Dead
369	240	5	"	"	"	OK
378	360	"	"	"	"	OK

AGGRESSIN C.

370	300	2	4/16	5	4/27	OK
371	300	"	"	"	"	Dead
372	270	3	"	"	"	OK
373	270	"	"	"	"	Dead
374	240	4	"	"	"	OK
375	240	"	"	"	"	OK
376	300	5	"	"	"	Dead
377	360	"	"	"	"	Dead

TABLE V.

ACTIVE IMMUNIZATION WITH FILTRATES.

A

Guinea Pig		Filtrate Injected		Virus Injected		Results
No.	Weight, Grams.	Amount, Ml.	Date	Amount, Mld.	Date	
305	360	2	4/9	5	4/20	Dead
306	270	"	"	"	"	Dead
307	390	"	"	"	"	OK
308	360	"	"	"	"	OK
309	330	4	"	"	"	OK
310	510	"	"	"	"	Dead
311	330	5	"	"	"	Dead
312	360	"	"	"	"	OK
		B				
347	300	2	4/16	5	4/27	OK
348	360	"	"	"	"	Dead
349	270	3	"	"	"	Dead
350	330	"	"	"	"	Dead
351	300	4	"	"	"	Dead
352	330	"	"	"	"	OK
353	270	5	"	"	"	OK
354	240	"	"	"	"	Dead
		C				
355	360	2	"	"	"	Dead
356	360	"	"	"	"	OK
357	300	3	"	"	"	OK
358	300	"	"	"	"	OK
359	240	4	"	"	"	OK
360	270	"	"	"	"	Dead
361	270	5	"	"	"	OK
362	360	"	"	"	"	OK

TABLE VI.

TEST SHOWING THE MLD. OF WASHED AND UNWASHED CULTURE VIRUS.

WASHED.

Guinea Pig		Culture Virus Injected		Results	
No.	Weight, Grams.	Amount, Mld.	Date	First Day	Second Day
69	360	.1	2/15	OK	OK
70	300	.2	"	OK	OK
71	390	.4	"	OK	OK
72	450	.8	"	OK	OK
73	210	1.6	"	OK	Dead
		UNWASHED.			
74	240	.05	"	2X	Dead

TABLE VII.

TEST SHOWING THE AGGRESSIVE ACTION OF AGGRESSIN AND FILTRATE.

Guinea Pig		Normal Serum Injected		Virus and Agg. or Filt. Injected			Results	
				Virus	Agg. or Filt.			
No.	Weight, Grams.	Amount, Mil.	Date	Amount, Mil.	Amount, Mil.	Date	First Day	Second Day
				A				
494	390	1	5/20	1	1	5/21	OK	OK
495	450	"	"	"	2	"	OK	OK
496	480	"	"	"	3	"	OK	OK
497	360	"	"	"	4	"	OK	Dead
498	480	"	"	"	5	"	3X	Dead
				B				
509	330	"	5/27	"	1	5/28	OK	OK
510	330	"	"	"	2	"	OK	OK
511	360	"	"	"	3	"	OK	OK
512	240	"	"	"	4	"	OK	Dead
513	390	"	"	"	5	"	OK	OK
				C				
514	330	"	"	"	1	"	OK	OK
515	240	"	"	"	2	"	OK	OK
516	360	"	"	"	3	"	OK	OK
517	270	"	"	"	4	"	½X	Dead
518	270	"	"	"	5	"	OK	OK
				D				
569	200	"	6/12	"	1	6/13	OK	OK
570	300	"	"	"	2	"	OK	OK
571	300	"	"	"	3	"	OK	OK
572	300	"	"	"	4	"	Dead	
573	200	"	"	"	5	"	Dead	
				E				
574	200	"	"	"	1	"	OK	OK
575	300	"	"	"	2	"	Dead	
576	250	"	"	"	3	"	Dead	
577	200	"	"	"	4	"	Dead	
578	325	"	"	"	5	"	Dead	

TABLE VIII.

POTENCY TEST OF THE SERUM OF A NORMAL HORSE.

Horse	Guinea Pig		Serum Injected		Virus Injected		Results	
	No.	Weight, Grams.	Amount, Mil.	Date	Amount, Mil.	Date	First Day	Second Day
Normal	776	325	.5	7/25	.1	7/26	OK	OK
	777	375	"	"	.2	"	1X	OK
	778	375	"	"	.4	"	OK	OK
	779	300	"	"	.6	"	OK	OK
	780	300	"	"	.8	"	1X	OK
	794	275	"	7/27	1.0	7/28	3X	3X
	795	300	"	"	1.25	"	3X	Dead
	796	305	"	"	1.5	"	2X	2X

OBSERVATIONS ON THE USE OF BIOLOGICAL PRODUCTS.*

DR. C. E. SALSBERY.

We sometimes wonder that veterinarians do not become weary, listening to papers and discussions on biological products, especially when presented and agitated by commercial houses. At the same time, so many inquiries are received regarding the use, efficiency and application of these products that it seems they do not remember what has been so often repeated or else they do not attend meetings where these subjects are presented.

Let it be understood that the points presented in this paper are entirely from correspondence and reports on file from veterinarians in practice and not from personal observation. We may have our own ideas regarding the theoretical application of biological products based on the scientific investigations of competent men, both in the laboratory and in the field, and whatever personal suggestions or ideas are incorporated in this article should be considered as only supplementary and as suggestions in connection with the observations obtained by studying field reports.

SWINE PLAGUE.

Perhaps no other season has seen a more careful study and distinction in diagnosis between hog cholera and swine plague than this one. So many letters and reports have been received from the field this year that we are convinced veterinarians are giving the post-vaccination trouble much more consideration than in previous years. Formerly it was considered bad serum or bad virus when, following vaccination, the hogs continued to die. Large quantities of serum were furnished gratis for revaccination and, while in some cases the loss was apparently checked, in many others no beneficial results were obtained.

Veterinarians would condemn the serum of one company and begin using that of another, but it is a question whether the change was not merely a psychological factor rather than an actual improvement.

There is considerable controversy as to the possibility of differentiating hog cholera and swine plague. That there is a

*Presented at the Missouri Valley Veterinary Association meeting in Omaha, July 16, 1918.

difference cannot be doubted. The two diseases may occur simultaneously in the same animal, in which case it is quite impossible to draw the line of differentiation, but it has been proven time after time that serum and virus will not eliminate the losses of animals infected with swine plague.

In summing up the variety of conditions described, from a long list of correspondence, we find the following: Pigs are unthrifty, more or less inactive, have a tendency to sniffle, hacking cough which becomes intensified as soon as the animal is forced to run, appetite very good, drink lots of water and live from a few days to two weeks. On autopsy they find a variety of conditions, some catarrhal pneumonia, others necrotic pneumonia with isolated and frequently encapsulated abscesses involving the greater portion of one lung and in many cases thickening of the intestinal wall, accumulation of cheesy exudate upon the mucous membrane, may or may not be hemorrhages in the kidneys, frequently some congestion in the lymphatics, quite frequently coagulated pleural exudate with adhesions, etc.

Upon laboratory examination of many specimens we have found all manner of infective organisms, particularly connected with the lesions described. We hardly ever fail to isolate some strains of staphylococci, B. coli and invariably the B. septicus, the latter always being identified by rabbit inoculation, microscopical and cultural technique, occasionally streptococci and suipestifer, rarely B. necrophorus are found.

There is no doubt that these mixed infections occur in conjunction with hog cholera and while the administration of serum and virus controls the cholera it has no effect whatever upon the other infections.

The reports upon the use of mixed infection vaccine for swine in connection with serum and virus, or in herds where the serum and virus failed to check the losses, have been so conclusive that to us it is no longer a matter of experimentation, but a fact that mixed infection vaccine for swine is a reliable treatment. There has been considerable controversy as to the benefits derived from a vaccine incorporating the B. necrophorus. At the present time the Department does not sanction its use, but there appears to be considerable field evidence that a vaccine containing the necrophorus bacillus is much more efficient in mixed infections where the necrophorus bacillus is present than a vaccine without it. At a recent meeting in the State of Illinois this question was thoroughly discussed and the reports of very

reliable men, who have had experience with the two vaccines, seem to warrant the incorporation of the B. necrophorus to get the best universal results.

At this writing, however, the U. S. Bureau of Animal Industry controlling the manufacture of biological products positively forbids offering for interstate shipment a bacterin or vaccine for swine containing B. necrophorus and the popular impression among some practitioners that there is a bacterial vaccine on the market for necrophorus infection should be corrected.

HEMORRHAGIC SEPTICEMIA — CATTLE AND SHEEP.

There is probably no other infectious disease in cattle and sheep, of recent years, which spread so rapidly and caused as great losses as hemorrhagic septicemia. At the same time, there is probably no immunizing product that has been so quickly developed and with such decidedly successful results as hemorrhagic septicemia vaccine.

One very interesting circumstance in connection with this disease is that a vaccine may be prepared by using virulent strains of organisms isolated from animals of different species. A vaccine containing B. bovisepticus, B. ovisepticus, B. suisepticus, B. avisepticus, may be successfully used in checking an outbreak in any of the species susceptible to the disease. However, the most favorable results obtained are in those instances in which the animals are immunized with vaccines prepared from organisms isolated from the same species; for instance, we would not recommend that the organism isolated from swine should be used in preparing a product for the immunization of cattle, or vice versa.

In the preparation of this product the writer feels that the most favorable results are obtained by preparing a polyvalent vaccine—that is, the strains are isolated from various sources—and also by the constant renewal of the cultures used by isolating the organisms from recent outbreaks.

There is, however, one great question which enters into the results in the use of hemorrhagic septicemia vaccine, and that is a differentiation between hemorrhagic septicemia and corn stalk disease. From personal observation we are unprepared to make a statement. It seems quite evident, however, from reports, that there must be a difference in the causative factor of these two conditions.

Some investigators have shown that in some instances which have been called corn stalk disease, the causative factor was *B. botulinus*, or forage poisoning.

One typical report on the use of hemorrhagic septicemia vaccine is as follows:

The owner of a large herd, after harvesting the corn, turned the animals into the stalk fields. In a very short time several animals died. A veterinarian was called and diagnosed the condition as hemorrhagic septicemia, which was confirmed by laboratory diagnosis. They were vaccinated and kept away from the stalks for five days, when they were returned and allowed to remain until the field had been cleaned up, without any further losses.

This goes to show that the animals should be kept from the source of infection until such a degree of immunity is developed that they can withstand a re-infection at a later period. Therefore, it is quite evident that this precaution should be observed in order to obtain the best results.

We have a number of reports on file of a similar nature, indicating that animals that die in stalk fields are not always protected by the use of hemorrhagic septicemia vaccine. On the other hand, many reports are received where losses were checked, under similar conditions, indicating that not all animals that die in stalk fields die of corn stalk disease. It is evident, therefore, that veterinarians must use considerable precaution in fixing a diagnosis and it is quite essential that in many cases laboratory assistance should be considered. There is no question that properly prepared hemorrhagic septicemia vaccine will protect animals against hemorrhagic septicemia infection.

INFLUENZA.

One of the very common infectious diseases of horses and mules that gives considerable trouble is influenza. Much time and energy have been spent in research as to the real cause of this disease without determining absolutely the definite factors. There is not any doubt that the exciting factor of influenza is a filterable virus, but we believe there is seldom, if ever, a case seen in which this virus is the solitary factor in the infection. Secondary infections of B. equisepticus, staphylococci, streptococci, pneumococci, B. coli and perhaps others, are always present in varying combinations. It is not possible to prepare a vaccine incorporating the filterable virus and any anti-influenza vaccine

may be efficient only to the degree that the secondary organisms it contains will immunize against the secondary infection.

In a great many cases the result of the secondary infection is much more serious than if the filtrable virus alone were present and the reports from the use of anti-influenza vaccine are so variable that it is impossible to classify it as a specific immunizing agent, as compared to hemorrhagic septicemia vaccine, blackleg vaccine or others of a similar character. At the same time many of the reports we receive taken by themselves would convince anyone that anti-influenza vaccine is an absolutely reliable immunizing agent. There are on file many reports which show that the use of this vaccine in these cases gave positive immunizing results in exposed animals.

In other cases there are reports on file where the results were considered only favorable in view of the fact that not all of the animals vaccinated and exposed became infected; those that were sick recovered promptly after a mild attack. In another class of reports, noticeably in the minority, it appears that vaccination was not followed with good results in that apparently no protection was given, or else it was only slight. It is therefore plainly evident that the large number of reports received must necessarily present a wide variation of results. To give an explanation of this condition is another proposition.

There are many circumstances which enter into the process, such as variation in virulence, time of vaccination with respect to the time of exposure, size of the dose, climatic conditions, etc., that it is next to impossible to give an explanation for the variation in these results. In spite of this relative degree of uncertainty we are not justified in condemning the use of anti-influenza vaccine, because a large percentage of the reports received indicate its unquestionable beneficial effect. The only advice that can be given is that the veterinarian must consider carefully all of the circumstances that are connected with the condition and use his best judgment in the application of the treatment. The use of anti-influenza serum combined with vaccine has given good results in infected cases.

BLACKLEG.

At the last meeting of the Nebraska State Veterinary Association we presented quite a thorough resumé of the various new and efficient blackleg immunizing products. Since that time the reports received on the use of these products has not varied

sufficiently to warrant a prolonged discussion, but the product known as "Aggressin" seems to be gaining a wider field of use than ever before. That it is a highly efficient and reliable product there is no doubt. In addition to this, being germ-free, eliminating any possibility of causing blackleg, is a decidedly favorable factor in its use. So far as giving permanent immunity is concerned, it is very difficult to say whether the aggressin alone is responsible for the prolonged immunity or whether the susceptible age of the animal does not also enter into the process.

Blackleg filtrate, a similar product, only prepared under artificial conditions, appears to have some following and no doubt gives fair results. The difficulty in the preparation of the filtrate is to handle it in such a manner that there will be a maximum amount of toxin with a minimum deterioration of the toxin. The toxin of the blackleg bacillus is very sensitive to light and air, and this, we believe, is one reason for unsatisfactory results that occasionally follow the use of the filtrate. Scientifically, the product should be a good one, because whether produced artificially or in the animal body this toxin should have the same immunizing properties, under similar conditions, but the field results with natural aggressin seem more dependable.

In the liquid blackleg vaccine we have now reached a point where the attenuation of the blackleg spore is positively fixed and the danger of causing disease has been eliminated. The reports on its use in a large number of animals treated during the past nine or ten months absolutely substantiate this statement. Its efficiency in the field appears to be equal to either the aggressin or the filtrate, and it is a question whether the injection of a known enormous number of attenuated spores does not produce even a more fixed immunity than the injection of a more or less uncertain amount of the toxin. At any rate, the day of the pill and powder form of vaccination is passing. Naturally, there will be some demand for these products, but their elimination in the field is bound to come.

BOVINE ABORTION.

In spite of the negative results reported by such men as Dr. Williams, Dr. Cotton, and others, there is still sufficient evidence that the use of abortion bacterin in cattle has been successful in the field. We have encouraged the report of unsuccessful cases by offering to refund the price on any treatment that failed to prevent the disease if the vaccination had been

carried out according to directions. We are willing to concede all the credit for their ability and experience to Drs. Williams and Cotton, and others, but we must say that the reports which we have received certainly do not substantiate their statements. It is not claimed that the treatment is 100% perfect; we doubt if any treatment is, but the percentage of successful treatments from our reports is sufficiently high to warrant the statement that the treatment with bovine abortion vaccine is successful.

Our offer to refund on unsuccessful treatments, we believe, has stimulated veterinarians to report such cases, and if that is true, then the number of successful treatments is well over 90%, and when this is compared with the losses occurring where the treatment has never been used, it is certainly worth while.

ABORTION IN MARES.

To most veterinarians this disease is new, especially as an infection. Very extensive experimentation was carried on in the State of Kentucky, and the causative factor was isolated and identified thoroughly and probably belongs to the B. coli group. Experimental results in the use of a vaccine prepared from pure cultures of this organism in various strains have been very successful; in fact, an article occurred in one of the periodicals a short time ago on similar experiments carried on in a new field and the results were so favorable that the treatment was recommended as a successful means of preventing abortion in mares. In our own records we have reports very much the same, one in particular received from a veterinarian in the southwestern part of Kansas, where a breeder of fine animals had suffered such losses during the past few years that he was about to discontinue the raising of horses. We received material from one of these cases for examination and suggested the possibility of infectious abortion and recommended a treatment. The results were so satisfactory that the owner of these animals has decided to go into the breeding industry more extensively and, as he says, "without any more fear of losing colts."

As was stated at the beginning of this article, the fundamentals in this discussion are based upon actual correspondence and reports from veterinarians in the field and not from personal observation. We have included a few personal ideas and we trust that discussion of the paper will bring forth the opinion and experience of others present.

CLINICAL AND CASE REPORTS.

A NOTE ON THE EFFECT OF COLD ON THE DEGREE OF PARASITIC INFESTATION.

MEYER WIGDOR, M. A.,
Research Laboratory of Parke, Davis & Co., Detroit, Michigan.

In our anthelmintic investigations connected throughout the winter of 1916 and up through January, 1918, about 300 Detroit city pound dogs, which were fairly representative of almost all breeds of dogs, except the toy varieties, were used. During this period suitable infested animals for anthelmintic treatment were readily obtainable, for a very large percentage of the dogs were infested with internal parasites.

Of close to 400 dogs that were examined, about 100, or 25 per cent, were rejected for experimental purposes on the strength of a negative fecal examination, which does not, however, prove that they were not infested with intestinal parasites. There may be worms present in spite of the absence of ova in the feces, for the worms might be all males, or the females might be immature, or so few in number that egg production is very limited, and hence undetected, or egg production might be inhibited by several factors. Dogs which show negative fecal findings on examination, when examined postmortem, are found to be infested. Of the 300 dogs examined postmortem, 271, or 93 per cent, were found infested with intestinal parasites. Thus, 271 dogs out of 400, or about 68 per cent of the Detroit dogs examined, were surely infested, and since some of the 100 dogs that were rejected would be found on postmortem examination to be infested, it can safely be asserted that more than seven out of ten Detroit dogs, under normal conditions, are infested with intestinal parasites.

Detroit dogs are infested with two species of ascarids, *Belascaris marginata* and *Toxascaris limbata*. Of the two species, *Belascaris marginata* was apparently the commoner one met with in our first series of 300 dogs. Of our first 67 infested, 47, or 70 per cent, were infested with ascarids, and, according to Hall (1917), all that were examined proved to be *Belascaris marginata*.

Of the 271 in the series of 300 infested, 144, or 53 per cent, were infested with ascarids, a large number of which proved to be *T. limbata.*

Next to the ascarids in the frequency of nematode infestations are the whipworm, *Trichuris depressiuscula,* which occurred in 111 of our 271 infested dogs, or in 41 per cent, and the hookworm, *Ancylostoma caninum,* which occurred in 89 of our 271 infested dogs, or in 33 per cent.

Thus, with 53 per cent of our Detroit dogs infested with ascarids, 41 per cent with whips, and 33 per cent with hookworms, very suitable material for anthelmintic investigations was always at hand. During the last few months, however—that is, during the latter part of February, March, April and May, 1918—approximately 50 out of 60 dogs examined showed negative fecal examinations with an almost total absence of hookworm infestation. Furthermore, the species of ascarid met with was not the expected common *B. marginata,* but the rarer of the two ascarid species, *T. limbata.* This marked falling off of parasitic infestation, as evidenced by negative fecal examinations, which is not, as has been stated before, entirely conclusive evidence of the absence of intestinal parasitism, is apparently due to the unusually prolonged, severe winter experienced this last year (1917-1918). It has been known that cold will retard the development of parasitic ova, and Stiles (1908) in regard to the effect of temperature on the hookworm eggs of man says: "Cold retards and heat hastens the development of the eggs and embryos; a freezing temperature of 24 to 48 hours' duration, it is said, kills both eggs and embryos." During this past winter, when the thermometers about Detroit registered as low as —20° and remained around zero for several days, the opportunity for development of most parasitic ova was reduced to a minimum.

The greater frequency of *T. limbata* in our dogs is apparently due to the greater resistance of its ova to extreme temperatures. The ova of *T. limbata* are provided with a double-contoured chitinous shell and an inner coat marked with interlacing striations suggesting fibres, which apparently affords the egg great protection against low temperatures. I have obtained embryo development in the ova of *T. limbata* in 35 days at a temperature of 10°C. At room temperatures 21-33°C, embryo development was noted in 2 to 3 days. Thus, temperatures as low as 10°C merely tend to retard the development of the ova of *T. limbata.* Ova, such as those of *B. marginata* and *Ancyclostoma caninum,*

which have no such highly developed shell, are undoubtedly unable to withstand the vicissitudes of low temperatures for any length of time.

It is interesting to note the results of the frequencies of parasitic infestations of dogs in regions south of Detroit, where warmer climate would evidently promote the development of parasitic ova, and hence the degree of parasitic infestation.

Hall (1917) found that of 76 infested dogs examined at Washington, D. C., 67 per cent of the dogs had ascarids, 57 per cent had whipworms, and 71 per cent had hookworms.

Wharton (1917) found 97.45 per cent of the 118 dogs examined in the Philippine Islands infested with intestinal parasites. Only 6.77 per cent of the dogs were infested with *T. limbata*, which is surprisingly low. Wharton states in regard to their small numbers: "The percentage of infestations with this form was much lower than I had expected to find it, and the number of worms present in each case was very small. The fact that the majority of the dogs examined were full grown may account for the small per cent shown. A veterinary surgeon informs me that this parasite is very frequently found in puppies here in Manila, while they are only rarely encountered in older dogs." Ninety-six per cent of his dogs were infested with hookworm, while there is no record of any whipworm infestation.

A comparison of the figures for 271 infested Detroit dogs, with 76 (Hall) and 48 (Sommer) infested Washington dogs and with 115 (Wharton) infested Philippine dogs shows that worm infestations are more numerous, as might be expected, in warmer climates. Hall finds a greater percentage (57 per cent) of the dogs at Washington, while Sommer finds a lower percentage (28 per cent) of the dogs at Washington to be infested with ascarids than those at Detroit (53 per cent). The percentage of ascarid infestation of both Detroit and Washington dogs is much higher than Wharton figures (6.77 per cent) for Philippine infestation, which is rather surprising. In regard to hookworm infestation, the figures show just what would be expected. Philippine dogs show the highest percentage of hookworm infestations, 96.6 per cent; Washington dogs rank second, with 71 per cent (Hall) and 56 per cent (Sommer), while Detroit dogs show the smallest percentage, 35 per cent; the farther North we go, the smaller the degree of infestation. In regard to whipworm infestation, we find that Washington dogs have a higher percentage of infestation (57 per cent, according to

Hall's figures, and 70 per cent, according to Sommer's) than Detroit dogs (41 per cent).

It thus appears that freezing temperatures of several days' duration would tend to diminish the degree of parasitic infestation, and it therefore seems feasible that manure or feces might be disinfected against most parasitic ova, especially hookworm ova, by being kept at very low temperatures for several days, without destroying the value of the manure as fertilizer, were this procedure practicable.

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A NEW FLUKE FROM THE DOG.

MEYER WIGDOR, M. A.
Research Laboratory of Parke, Davis & Co., Detroit, Mich.

Recently Hall and Wigdor (1918) reported the occurrence of two new flukes, *Alaria americana* and *Alaria michiganensis,* in Detroit dogs, which were the first authentic cases of intestinal fluke infestation of dogs in North America. In fact, the only fluke that appears to have been reported from dogs in the United States is *Paragonimus kellicotti,* which occurs as a pulmonary parasite of dogs, cats and swine.

In our series of 350 dogs examined postmortem at Detroit, intestinal flukes were found in 8 animals, *A. americana* and *A. michiganensis* being represented in 7 of these and a new, heretofore undescribed, species (12 specimens) in the other.

An examination of this new species of fluke shows that it falls into the sub-family Opisthorchiinæ, but it cannot be correlated with any well-established genus within that group, and hence has been placed in a new genus, *Hallum,* Wigdor, 1918.

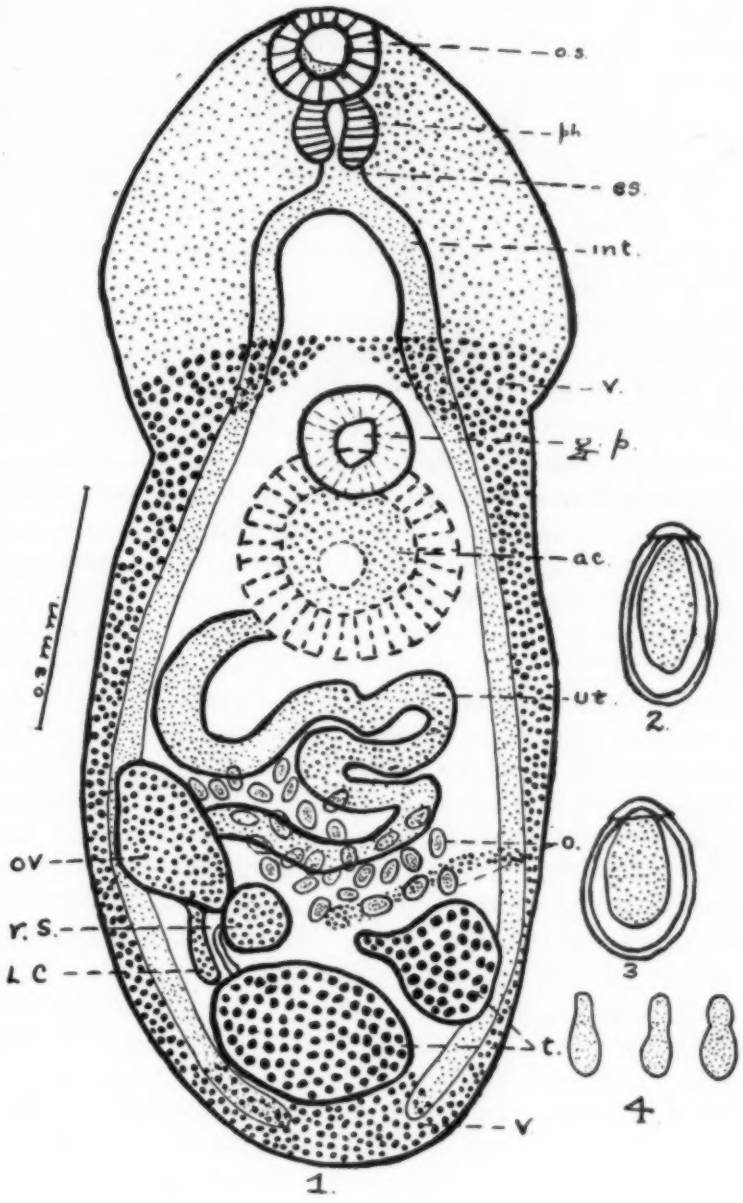

FIGURE 1. HALLUM CANINUM. DORSAL VIEW.
o.s. = oral sucker; ph. = pharynx; es. = esophagus; int. = intestine; v. = vitellaria; g.p. = genital pore; ac. = acetabulum; ut. = uterus; o. = ova; t. = testes; ov. = ovary; r.s. = receptaculum seminis; L.C. = Laurer's Canal.

FIGURES 2-3. Hallum caninum Ova × 230.

FIGURE 4. Hallum caninum × 5

This genus appears to fill a gap in the genera of the sub-family Opisthorchiinæ as regards the extent of the vitellaria. In the genus *Opisthorchis,* the vitellaria are confined in the area posterior to the acetabulum and anterior to the ovary and testes; in the genus *Amphimerus,* the vitellaria do not extend anteriorly beyond the acetabulum and frequently extend posteriorly to or beyond the posterior testis; in the genus *Metorchis,* the vitellaria extend anteriorly beyond the acetabulum and do not extend beyond the ovary and testes; in the genus *Hallum,* however, the vitellaria extend anteriorly beyond the acetabulum and posteriorly beyond the ovary and testes.

Members of the sub-family Opisthorchinæ have been reported as occurring in the bile ducts or gall bladder of man, mammals, birds, reptiles and fish, this being the first report of the occurrence of one of the species of this group as an intestinal parasite.

SUB-FAMILY *OPISTHORCHIINÆ,* LOOSS, 1899.

Sub-family diagnosis—Fasciolidæ of medium size, with slender elongated body, noticeably tapering anteriorly. Suckers near each other and generally not strongly developed. Pharynx present. Esophagus short and slender, intestinal ceca long and simple. Excretory system Y-shape, arms short, main stem long and S-shape, winding between the testes. Genital pore median and anterior to the acetabulum. Copulatory organs present. Testes close together in the posterior end, the one more or less obliquely behind the other. Laurer's canal present. Receptaculum seminis very strongly developed. Uterine coils anterior to the ovary. Vitellaria strongly developed, lateral of the intestinal ceca.

GENUS *HALLUM,* WIGDOR, 1918.

Generic diagnosis—Thin, flattened, transparent, forms with body often attentuated at anterior extremity and a posterior broader end; anterior end sometimes constricted at the level of the acetabulum; anterior extremity frequently covered with small, retrose spinelets. Suckers quite widely separated. Acetabulum larger than the oral sucker. Digestive tract with distinct muscular pharynx, short esophagus and two long simple intestinal ceca. Genital pore median, immediately anterior to the acetabulum. Copulatory organs absent. Testes in posterior portion of the body, simple or lobate, the one obliquely posterior to the other. Ovary slightly anterior to testes, either simple or slightly lobed. Laurer's canal and receptaculum seminis present. Uterine coils anterior to ovary and generally do not extend over the intestinal ceca. Vitellaria in one region, well-developed extending cephalad beyond the acetabulum and posteriad beyond

the posterior testes; vitellaria lateral of the intestinal ceca in post-acetabular region and often extending median in pre-acetabular region.

Type species—Hallum caninum, Wigdor, 1918.

SPECIES HALLUM CANINUM, WIGDOR, 1918.

Specific diagnosis—Body flat and transparent; anterior portion bluish and posterior whitish; anterior portion either attenuated or constricted in the region of the acetabulum. Anterior portion of body usually covered with small retrose spinelets. Length of body 0.902—1.646 mm. Width at widest part 0.431—.470 mm. Oral sucker sub-terminal 0.066—0.104 mm. in diameter. Length of pharynx 0.066—0.080 mm. Esophagus very short, 0.040—0.060 mm. long. Intestinal ceca usually equal, extending to the posterior end of the body. Acetabulum much larger than oral sucker, measuring 0.136—0.184 mm. in diameter, and situated somewhat anteriad of the middle of the body. Genital pore prominent, median, at anterior margin of the acetabulum. Ovary usually slightly anterior to testes, oval or elliptical in shape and usually smooth in outline. Cirrus pouch absent. Testes approximately in posterior eighth of body, one obliquely behind the other, usually orbicular or oval in shape and either smooth or lobed in outline. Uterine coils well developed, filling a good portion of the body between the intestinal ceca, the ovary and the acetabulum, the coils not extending over the intestinal ceca. Laurer's canal and receptaculum seminis present, but usually not very prominent. Vitellaria well developed, extending 0.120—0.220 mm. anteriad of the acetabulum and posteriad beyond the posterior testis, filling up most of the posterior portion of the body posteriad of the testes. The vitellaria usually extend laterad of the intestinal ceca in the post-acetabular portion of the body, but usually extend over the intestinal ceca to the middle of the body anteriad of the acetabulum. Eggs reddish brown, with a distinct lid and opercular rim, measuring 0.032—0.048 mm. by 0.018—0.022 mm.

HOST—*Canis familiaris.*

LOCATION—Small intestine.

Locality—Detroit, Mich.

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ABSTRACTS FROM RECENT LITERATURE.

SUNLIGHT IN THE TREATMENT OF EQUINE MANGE.

M. Dieudonné, in *Recueil de Médecine Vétérinaire*, 15 Juillet, 1918, recorded several cases in which mange was cured by the open-air treatment and exposure to sunlight.

Ordinary treatment did not prove successful, but the author states that sunlight kills the mange acari, and he also suggests that moonlight has a similar effect, probably by the ultra-violet rays that it is said to project. Similar remarks apply to lice.

PUNCTURED NAVICULAR BURSA WITH NECROSIS OF THE APONEUROSIS.

In reporting these cases, I think the great factor of success was the use of an autogenous vaccine.

The two cases ran a similar course; both had been treated by owners with poultices until the lameness became excessive; when I was called in there was a free discharge of synovia and pus from the wound at side of frog.

Treatment consisted of thinning the sole and frog, and opening the puncture as much as possible. The foot was daily bathed in Jeyes', a carefully applied antiseptic dressing was put on with a leather boot over all. Excessive granulations were kept down with caustic dressing, $CuSO_4$, when necessary.

A swab was sent for autogenous vaccine, and the vaccine was given for six consecutive days. There was distinct reaction, lameness and discharge being increased. Two or three days after the finish of the vaccine a portion of the necrotic aponeurosis about the size of a shilling was found in the dressing. After this, discharge gradually became less and complete healing quickly took place.

By the use of caustic and the knife the puncture in sole was kept open, which gave a fairly free exit to the portion of the necrotic tendon.

I do not know if practitioners in this country carry out the classical operation of resection; if so, I have never seen a case reported. It would be interesting to have the experiences of anyone who has done this operation for the cure of necrosis of the aponeurosis.—G. E., in *Veterinary Record* (London).

THE PHYSICO-PHYSIOLOGICAL TREATMENT OF TRAUMATIC ABDOMINAL HERNIA IN THE HORSE.

G. Mullie, in the *Recueil de Médecine Vétérinaire* for 1917, relates three observations upon cases of hernia of this class. The results of his treatment enable him to conclude that certain abdominal hernias may be treated easily and efficaciously by the elevation of the posterior third of the body and the observation of a reduced diet. This treatment is especially applicable to cases of traumatic hernia with posterior localization and with a hernial ring of narrow diameter.

The position, declining from behind forwards, which is given to the horse during the treatment, by its mechanical effects permits the intestinal mass to be directed and drawn towards the antero-inferior region of the abdomen. These effects may cause the spontaneous reduction of the herniated mass, and the consequent cicatrization of the abdominal traumatism. The concentration of the diet, by diminishing the volume of the gastro-intestinal mass, is a powerful aid in obtaining the desired result. —*Revista de Higiene y Sanidad Pecuarias.*

RUPTURE OF AN INTESTINAL DIVERTICULUM.

R. Paille, in *Recueil de Médecine Vétérinaire,* 15 Juillet, 1918, reported a case of the above lesion in a mare. The animal was admitted to infirmary suffering from acute abdominal pain, which resisted all treatment. Death occurred on the following day. The autopsy revealed an abundant peritoneal effusion, with marked congestion of the mesentery, and of the peritoneum, especially on the visceral layer. Multiple deposits of fibrinous exudate were present, notably at the crook of the cæcum. A diverticulum of the ileum, the size of a fist, was found, situated 20 centimetres from the termination of this bowel. It was separated into compartments by septa, and was perforated in two

places. The interior of the pouch contained putrified ingesta, its mucous lining was granular, of a greenish yellow color, and its wall was very thin at the level of the two perforations. By the side of this cavity another one was found, partitioned off by a septum—a sort of small infundibulum, the floor of which was ulcerated and of a dark red color.

SEAWEED AS HORSE FEED.

The following is from a report by M. Adrian, of the French Ministry of War:

The analysis of seaweed as compared with oats as shown by M. Balland is as follows:

	Seaweed %	Oats %
Water	14.40	12.55
Hydrocarbons	52.90	68.80
Nitrogen	17.30	9.10
Cellulose	11.50	8.45
Mineral matter	3.90	3.10

It will be seen that the seaweed from which the salt has been extracted contains less hydrocarbonated matter, but a much higher percentage of nitrogen, making it a very nutritious product if digestible and assimilated.

In June, 1917, some horses belonging to M. Verdier-Dufour, of Aubervilliers, were in a bad state from lymphangitis. There were six horses. Three had ordinary diet of oats, hay and straw, and three were fed on alimentary seaweed. They were kept at work. For the first eight days alimentary seaweeds were substituted for oats at a rate of 0.35 kilo. for 0.45 of oats. During the rest of the experiment, which lasted 24 days, seaweed was substituted entirely for oats. On the 24th day the horses fed on seaweed were found to have increased 6 per cent. in weight and their general condition had improved and the lymphangitis had disappeared. In the other three animals fed on ordinary diet the lymphangitis did not improve.

The animals had accepted, digested and assimilated the new food in place of oats.

Experiments were made on 20 horses of the First Cuirassiers, which were divided into two lots, and one lot placed on normal diet and the other given 1 kilo. of alimentary seaweed in place of the kilo. of oats. The experiments were under the supervision of MM. Jacoulet and Fray; they lasted two months, and it was

found that on weighing the horses, those fed on seaweed had gained individually 13 kilos. in two months, whilst the others had scarcely gained 2 kilos.

Seaweed grows abundantly on the coast of Brittany. It is considered that 0.75 kilo. of alimentary seaweed is equal to 1 kilo. of oats, but this point requires further elucidation.

As a substitute for oats there should be a great future before seaweed. France imports 2,000,000 quintals of oats yearly, representing a sum of 35,000,000 francs. If the seaweed can supply a supplementary crop to the home fields, much money sent out of the country for oats will remain at home.—*Veterinary Journal.*

PROGRESS OF TICK ERADICATION SHOWN.

To show the progress of the tick eradication work, the United States Department of Agriculture staged an exhibit at the Southern Land Congress held at Savannah, Ga., November 11 and 12. The exhibit showed that 1918 was a record year in freeing southern territory from the tick quarantine, 79,217 square miles being released. A map was included in the exhibit showing the territory originally in quarantine and the territory freed since it was established in 1906. Four field men of the department, who are employed in the tick eradication work, and a representative from the Bureau of Animal Industry attended the congress.

Dr. G. R. Louden has been transferred from the work of tick eradication, Baton Rouge, La., to such work on the Fort Worth, Texas, force.

Dr. G. T. Jackson has been transferred from the work of tick eradication, Baton Rouge, La., to such work on the Jacksonville, Florida, force.

Dr. V. H. Stevens has been transferred from the work of tick eradication, Baton Rouge, La., to the work of tuberculosis eradication on the Harrisonburg, Pennsylvania, force.

Dr. H. N. Guilfoyle, formerly of the Baton Rouge, La., force, has finally received a passport and credentials from the War Department and will report for duty the middle of November.

Dr. Frank W. Schofield, formerly in the Dominion Government service, who will be remembered in connection with work done on pyemic arthritis in foals, is now with the Severance Union Medical College, Seoul, Chosan, Korea.

ARMY VETERINARY SERVICE.

A VISIT TO CAMP GREENLEAF.

Nothing could be of greater interest to a veterinarian than a visit to one of the Medical Officers' Training Camps and see what is being done to equip the Veterinary Branch of the Army for service that will enable it to help win the war.

The objects of the Veterinary Section are to train veterinarians from civil life in the duties and conduct of military officers and to coördinate veterinary knowledge along lines of most use in the Army.

The course is not an intensive one along veterinary lines, but is such along military lines, including all the subjects usually given in officers' training camps.

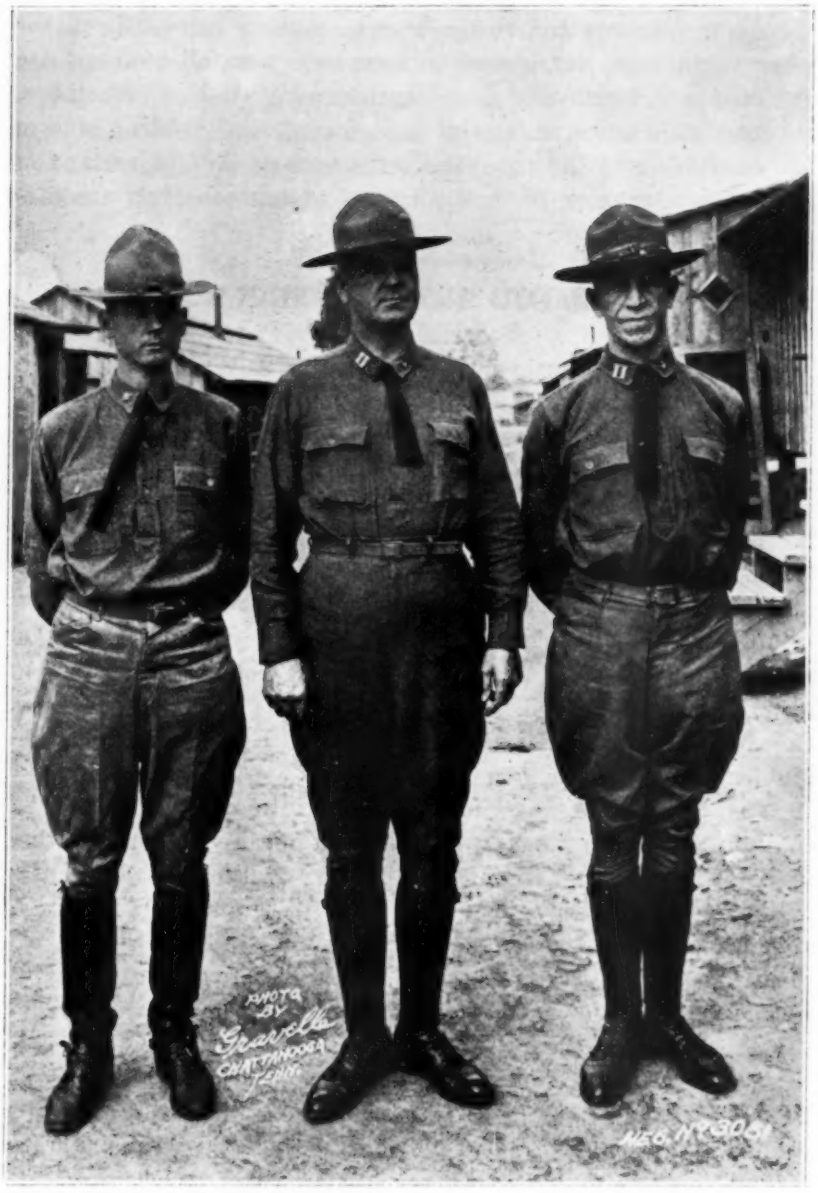
Prior to September 1, veterinary student officers were assigned to Battalion Seven, and this battalion was composed of student officers from several branches of the Medical Department, including medical, dental, sanitary and veterinary officers. On that date several new battalions were authorized, and Battalion Twelve is exclusively veterinary, being officered entirely by veterinarians, which has greatly facilitated the work of training veterinary officers.

The course of instruction covers eight weeks, the first four being devoted to basic military work, lectures and drill, and the second four weeks is taken up with part military work, drill, and veterinary instruction.

Two classes are run simultaneously, approximately one hundred officers being received each month, and a like number graduated each month. After completing the course of instruction, veterinary officers are assigned to various posts and duties.

For the purpose of instruction, and in order that there shall be no conflict in the matter of rank, all student officers reporting for a course of training are required to lay aside all insignia of rank, and all are handled, drilled, housed and trained as a battalion of privates. Company officers are chosen from the ranks, and it is the custom to rotate these officers in order to give as many as possible the opportunity for training.

Veterinary officers now reporting for training are from the men commissioned as a result of examinations given subsequent



INSTRUCTORS VETERINARY SECTION, M. O. T. C.,
CAMP GREENLEAF, GEORGIA.

From left to right: Major Wilfred J. Stokes, V. C., Senior Instructor and Camp Veterinarian; Captain Otis A. Longley, V. C., Instructor; Captain Fonsa A. Lambert, Instructor and Commanding Officer, Twelfth Battalion.

to the reopening of the privilege on August 1. Such a complete change in manners and customs proves to be a little difficult for some of the men, but, almost without exception, all soon acquire the proper "esprit" and get along like a big class of schoolboys.

And while strict discipline is enforced, and student officers are busy most of the time, the occasional periods of recreation are taken advantage of, and all sorts of innocent fun are carried on.

RECOGNITION FOR ARMY VETERINARY CORPS.

In September, Lieutenant Colonel David S. White, Veterinary Corps, was appointed Chief Veterinarian of the American Expeditionary Forces in France. This action of General Pershing places a veterinarian in immediate charge of the Army Veterinary Service in France and brings to a satisfactory conclusion the hard fight the Veterinary Corps has had to make for recognition; it also puts into complete operation the plan of organizing the Veterinary Service of the Army which was recommended by the Veterinary Advisory Board appointed by the Surgeon General last August. Lieutenant Colonel White was a member of this Board, the other members being Lieutenant Colonel C. J. Marshall, Major Louis A. Klein, Dr. John R. Mohler and Dr. V. A. Moore.

The plan of organization was put into operation in this country last fall and has proven to be admirably adapted to the needs of the service here. There is every reason to believe that it will operate equally as satisfactorily in France. It is based very largely upon the organization of the Veterinary Service of the British Army, which in four years of active operations in France has fully demonstrated its efficiency and rendered very valuable service to the British Army.

Lieutenant Colonel White has taken up a very large burden which is charged with great responsibility, but with the loyal support of his colleagues there is no doubt that he will be able to organize and operate a veterinary service which will be a credit to the Veterinary Corps.

The decision of the Comptroller, reprinted in our last number from the Army and Navy Journal, that a veterinarian in the Army cannot be promoted to the rank of major, refers only to permanent commissions and is based upon the Act of Congress approved June 3, 1916. Under general orders approved by the

Secretary of War, which were issued as a result of representations made by the Veterinary Advisory Board, veterinarians may be commissioned up to the rank of colonel for the present war. Under this authority a number of veterinarians are holding commissions as majors and four as lieutenant colonels as follows: C. J. Marshall, R. J. Stanclift, David S. White and Gerald G. Griffin. No veterinarian has as yet been commissioned as a colonel.

MAJOR J. H. BLATTENBERG COMMUNICATES INTERESTINGLY.

In a communication to Dr. Sheets, in charge of his affairs in his home town, Major J. H. Blattenberg gives some very interesting information, a part of which we cull from the Republican Gazette, Lima, Ohio, as follows:

This is five o'clock in the morning that I am penning you a few lines. The reason I am writing at this dark hour of the morning is that I have just sent one hundred and fifty good horses to the front, four to a man, who rides one and leads three.

The public may not think of the horse and the mule as very valuable adjuncts in this so-called motor age, but I am permitted to say that they are helping wonderfully in winning this war; in fact, no one here would suggest that a single animal could be dispensed with; more are needed.

The officers and men at the real fighting front must have so many varieties of supplies, ammunition, guns and artillery, and there are so many places which prevent motor transportation, it is inadequate to the situation, so the horseless age, as we are inclined to look at it, because of the great output of motors, is not here and will not be here for some time to come—in war, at least. All kinds of animals are certainly doing their part in this great conflict in helping the organizations at the real active front and everything is made to bend to their sustenance, care and support. Men and animals deserve and get the first attention if they are serving near or in the front line.

I am not in the Fifth Division now. I have been placed as the commanding officer in the largest and best equipped army veterinary hospital in France. The first officer who had charge of it was Major Merillat of Chicago, who is now veterinarian for the First Army Corps. Major McKillip of Chicago followed Major Merillat.

I have a very good organization of officers and men. I have three companies of men and look for another company to be attached. We receive from the front lines poor, emaciated animals suffering from disease, most of which is mange, distemper and infectious lymphangitis, also wounds and injuries of war. Many need nothing but rest, feed and medical treatment to bring them back to condition. We are continually receiving animals and in turn pick out those that will require prolonged treatment and evacuate them to smaller hospitals in the rear.

I am not quite as close to the real front as when with the division, but not so far but what the guns at the front can be heard plainly and at night the flashes can be seen. We are not overlooked as to air raids, however, which are usually at night, especially on a bright moonlight night.

PERSONAL MENTION.

First Lieutenant Grenfell, Veterinary Corps, formerly of Washington, D. C., was badly wounded and gassed in a recent offensive in France. The wound consists of a compound fracture of the leg, the result of a shell explosion. He is at a base hospital.

Major W. P. Hill, who has been in France for three years in connection with the veterinary branch, returned to America late in October.

Major George McKillip, formerly in charge of Base Hospital No. 6, is now inspector at ports in France.

Colonel Aikin is assisting Colonel D. S. White, who is in charge of all the veterinary work in France.

All of the veterinary work in France has been placed under the Medical Department.

Veterinary Base Hospital No. 6, probably the largest and best equipped in France, maintains a school for casual veterinarians who may be sent there for a ten days' course of lectures. These lectures deal with the special veterinary problems as they are encountered in France. At this hospital there are a large number of horses and mules that are treated and returned to the front. All of the forage is under shelter. This hospital was first in charge of Major L. A. Merillat. Later Major George McKillip was in command. Major McKillip has recently been made inspector at ports in France, and Major John Blattenberg is now in command of Base Hospital No. 6.

ASSOCIATION NEWS.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

President V. A. Moore has appointed the following committees and Resident State Secretaries:

COMMITTEE ON RESOLUTIONS.

C. A. Cary, Auburn, Alabama, Chairman.
C. D. McGilvray, 110 University Ave., Toronto, Ont., Canada
S. H. Ward, Minneapolis, Minnesota.
H. Jensen, Kansas City, Missouri.
Otto Faust, Poughkeepsie, New York.

AUDITING COMMITTEE.

H. K. Ryder, Chicago, Illinois, Chairman.
L. Enos Day, Chicago, Illinois.
W. H. Robinson, Portland, Maine.
C. G. Lamb, Denver, Colorado.
W. J. Martin, Kankakee, Illinois.

COMMITTEE ON NECROLOGY.

J. W. Connoway, Columbia, Missouri, Chairman.
R. W. Ellis, New York City.
E. A. Cahill, Zionsville, Indiana.
J. B. Hollingsworth, Ottawa, Ont., Canada.
G. F. Jungerman, Hiawatha, Kansas.

COMMITTEE ON HISTORY.

At the Philadelphia meeting a resolution was passed calling for the appointment of a committee on veterinary history to consist of one man from the army, one from the Bureau of Animal Industry, one from Canada, one from schools and one from practice.

R. C. Moore, St. Joseph, Missouri, Chairman, representing the schools.

Major C. D. McMurdo, Chicago, Illinois, representing the army.

U. G. Houck, Washington, D. C., representing the Bureau of Animal Industry.

C. H. Higgins, Ottawa, Canada, representing Canada.

Geo. H. Berns, Brooklyn, New York, representing practice.

COMMITTEE ON ANATOMICAL NOMENCLATURE.

H. S. Murphy, Ames, Iowa, Chairman.
S. Sisson, Columbus, Ohio.
I. Ernest Newsom, Fort Collins, Colorado.

F. W. Chamberlain, East Lansing, Michigan.
Mark Francis, College Station, Texas.

COMMITTEE ON ARMY SERVICE.

Lieutenant Colonel C. J. Marshall, Philadelphia, Pennsylvania, Chairman.
Jno. R. Mohler, Washington, D. C.
L. H. Howard, Boston, Massachusetts.
Lieutenant Colonel R. J. Stanclift, Washington, D. C.
Major W. H. Lytle, Salem, Oregon.

SALMON MEMORIAL COMMITTEE.

President Moore has added the name of Dr. Jno. R. Mohler to the Salmon Memorial Committee.

LIAUTARD MEMORIAL COMMITTEE.

It was the intention of former President Torrance to appoint Dr. S. Brenton, who was a personal friend of the late Dr. Liautard, a member of the Liautard Memorial Committee, but, owing to an error, the name of Dr. W. L. Brenton was announced. This mistake has been corrected, and Dr. S. Brenton will act on the committee. N. S. M.

RESIDENT SECRETARIES FOR 1918-1919.

Alabama—D. L. Allen, Auburn.
Arizona—J. C. Norton, Fleming Block, Phoenix.
Arkansas—R. M. Gow, Old State House, Little Rock.
Alberta—M. V. Gallivan, Lethbridge ,Alta.
California—George H Hart, Berkeley.
Colorado—I. E. Newsom, Colorado State College, Fort Collins.
Connecticut—Thos. Bland, 74 Phoenix Ave., Waterbury.
Delaware—H. P. Ives, Wilmington.
District of Columbia—R. W. Hickman, Washington.
Florida—L. E. Lyons, Tallahassee.
Georgia—Wm. Burson, Athens.
Hawaii—V. A. Norgaard, Honolulu.
Idaho—R. B. Hurd, Payette.
Illinois—W. H. Welch, Lexington.
Indiana—G. H. Roberts, Indianapolis.
Iowa—Hal C. Simpson, Denison.
Kansas—L. W. Goss. Manhattan.
Kentucky—S. L. Musselman, Frankfort.
Louisiana—E. I. Smith, Baton Rouge.
Maine—H. B. Westcott, Portland.
Maryland—F. H. Mackie, Baltimore.
Massachusetts—L. Frothingham, Boston.
Manitoba—W. A. Hilliard, Winnipeg, Man.
Minnesota—C. P. Fitch, St. Paul.
Mississippi—E. M. Ranck, Agricultural College.
Missouri—L. S. Backus, Columbia.
Montana—A. D. Knowles, Missoula.
Michigan—H. P. Hoskins, 50 Tireman Ave., Detroit.
Nebraska—J. S. Anderson, Seward.
New Hampshire—A. C. Farmer, Berlin.
Nevada—E. J. Records, Reno.
New Jersey—E. T. Smith, Jersey City.
New Mexico—G. A. Lipp, Roswell.
Nova Scotia—Geo. Townsend, New Glasgow, N. S.

New York—W. G. Hollingworth, Utica.
North Carolina—G. A. Roberts, West Raleigh.
North Dakota—C. H. Babcock, New Rockford.
Ohio—C. H. Case, Akron.
Ontario—George Hilton, Ottawa, Ont.
Oklahoma—John S. Grove. Oklahoma City.
Oregon—B. T. Simms, Corvallis.
Pennsylvania—H. W. Turner, Pittsburg Union Stock Yards.
Prince Edward Island—W. H. Pethick, Charlottetown.
Philippines—Stanton Youngberg, Manila.
Quebec—A. A. Etienne, Montreal.
Rhode Island—T. E. Robinson, Westerly.
Saskatchewan—M. Barker, Saskatoon.
South Carolina—F. P. Caughman, Columbia.
South Dakota—J. T. E. Winwoodie, Brookings.
Tennessee—F. W. Morgan, Chattanooga.
Texas—R. P. Marsteller, College Station.
Utah—John Ernst, Salt Lake City.
Vermont—F. A. Rich, Agri. Exp. Station, Burlington.
Virginia—W. G. Chrisman, Blacksburg.
Washington—J. T. Seeley, Seattle.
West Virginia—S. E. Hershey, Charleston.
Wisconsin—W. A. Wolcott, Madison.
Wyoming—H. R. Millard, Cheyenne.

N. S. MAYO, Secretary.

ADDITIONS TO THE MEMBERSHIP AT THE PHILADELPHIA MEETING.

ALABAMA

McCormack, Lt. W. D.....Dora
Allen, D. L.....Auburn

ARIZONA

Gerdes, H. E.....Phoenix

ARKANSAS

Ewing, F. R.....A. R. D., 317, Camp Pike
Barber, O. A.....A. R. D., 317, Camp Pike
Campbell, O. D.....Warren
Getz, H. R.....care of B. A. I., Mena
Johnson, P. A.....Old State House, Little Rock
Wilson, H. W.....A. R. D., 317, Camp Pike

CALIFORNIA

Dobbs, E. M.....Davis
Graham, G. D.....720 Valencia St., San Francisco
Jones, Capt. E. C.....Camp Vet., Camp Kearny
Musser, Maj. R. C.....Div. Vet., 8th Div., Camp Fremont
Nockolds, C.....Div. Vet., 40th Div., Camp Kearny
Parks, I. W.....A. R. D., 332, Camp Fremont
Robertson, R. J.....3615 Iron St., Chicago
Sinai, Nathan.....229 E. Church St., Stockton
Wyatt, D. H.....Santa Paula

COLORADO

Carson, W. L.....303 Live Stock Exchange Bldg., Denver
Elliott, J. A.....3035 Race St., Denver
Harrington, C. F.....679 Grant St., Denver
Leeper, R. B.....Stock Yards Sta., Denver

CONNECTICUT

Conway, W. T.....179 Elm St., West Haven
Kronfeld, C. L.....101 Albany Ave., Hartford
Schofield, E. F.....58 E. Elm St., Greenwich
Birmingham, E. A.....135 Washington Ave., Bridgeport

DELAWARE

McDaniel, Harry, Jr.....220 S. State St., Dover
Ruhl, F. P.....Milford

DISTRICT OF COLUMBIA

Bosley, Harry.....309 6th St., N. W., Washington
Catlett, J. G.,
Purchasing Officer Public Animals, Remount Division, Washington
Collins, W. P.....2130 P St., N. W., Washington
Middleton, W. G.....612 L St., N. W., Washington
Graham, J. W.....2030 N. Capitol St., Washington
Carpenter, P. F,
Purchasing Officer Public Animals, Remount Division, Washington
Saunders, Albert, Jr.,
Purchasing Officer Public Animals, Remount Division, Washington
Dunn, C. W.,
Purchasing Officer Public Animals, Remount Division, Washington

FLORIDA

Lyons, L. E.....State Live Stock Sanitary Board, Tallahassee
Stever, A. C.....504 Florida Life Bldg., Jacksonville
Haven, E. F.....8th and Talleyrand, Jacksonville

GEORGIA

Aitken, W. A.....23 Cav., F. A., Fort Oglethorpe
Beeman, Capt. H. N.....Bn. 7, Camp Greenleaf
Benner, Lt. J. W.....Co. 28, Bn. 7, Camp Greenleaf
Boulton, Lt. W. D.....Co. 28, Bn. 7, Camp Greenleaf
Boazman, Lt. J. B.....Co. 28, Bn. 7, Camp Greenleaf
Breeden, Lt. G. L.....Co. 28, Bn. 7, Camp Greenleaf
Brinkman, R. L.....Bureau Animal Industry, Cairo
Burkhart, W. C.....Athens
Butler, F. E.....Hdqrs., 31st Div., Camp Wheeler
Chase, Lt. E. E.....Co. 28, Bn. 7, Camp Greenleaf
Cockerton, Lt. E. B.....Co. 29, Bn. 7, Camp Greenleaf
Cook, Lt. H. T.....Co. 28, Bn. 7, Camp Greenleaf
Crow, Lt. L. C.....Co. 28, Bn. 7, Camp Greenleaf
Cropper, R. E.....Greenville
Duckworth, Lt. R. E.....Co. 29, Bn. 7, Camp Greenleaf
Eastman, Lt. Chas.....Bn. 7, Camp Greenleaf
Farr, Lt. H. L.....Co. 28, Bn. 7, Camp Greenleaf
Geick, Lt. W. A.....Bn. 7, Camp Greenleaf
Guldner, Lt. R. C.....Bn. 7, Camp Greenleaf
Gilbert, Lt. G. E.....Co. 29, Bn. 7, Camp Greenleaf
George, Lt. F. H.....Co. 31, Bn. 7, Camp Greenleaf
Houston, Lt. F. D.....Co. 28, Bn. 7, Camp Greenleaf
Johnston, Lt. E. J.....Co. 30, Bn. 7, Camp Greenleaf
Jones, Lt. G. B.....Co. 28, Bn. 7, Camp Greenleaf
Hornbaker, Lt. H. R.....321st F. A., Camp Gordon
Kitzhofer, Lt. J. H.....Co. 28, Bn. 7, Camp Greenleaf
Kyle, Lt. W. M.....Bn. 7, Camp Greenleaf
Luster, Lt. M. J.....Bn. 7, Camp Greenleaf
Lee, F. M.....A. R. D., 311, Macon
McIntosh, Lt. H. K.....321st F. A., Camp Gordon
McMillen, Lt. C. M.....Co. 28, Bn. 7, Camp Greenleaf
Martin, W. A.....Camp Q. M. C., Camp Gordon
McLain, Lt. W. H.....Box 703, Camp Greenleaf
Nettleton, Lt. E. N.....Co. 29, Bat. 7, Camp Greenleaf
Northway, Lt. J. K.....Co. 28, Bat. 7, Camp Greenleaf
Naylor, Lt. H. W.....Bat. 7, Camp Greenleaf
Purdy, D. M.....Co. 29, Bat. 7, Camp Greenleaf
Palmer, Lt. C. C.....Co. 29, Bat. 7, Camp Greenleaf
Popelars, Lt. W. E.....Co. 28, Bat. 7, Camp Greenleaf
Porteus, Robert.....Camp Hdqrs., Camp Gordon
Regenos, Lt. S. H.....Co. 29, Bn. 7, Camp Greenleaf

Richardson, Lt. J. W.....Co. 29, Bn. 7, Camp Greenleaf
Robbins, H.....526 Federal Bldg., Atlanta
Robertson, Lt. W. S.....Co. 29, Bn. 7, Camp Greenleaf
Roper, Lt. A. J.....Co. 28, Bn. 7, Camp Greenleaf
South, Lt. R. L.....Co. 29, Bn. 7, Camp Greenleaf
Seute, Lt. W. H.....Co. 28, Bn. 7, Camp Greenleaf
Young, Lt. C. H.....Co. 28, Bn. 7, Camp Greenleaf
Agin, Lt. B.....Co. 28, Bn. 7, Camp Greenleaf
Albright, Lt. W.....Co. 28, Bn. 7, Camp Greenleaf
Allen, Lt. L. H.....Box 732, Camp Greenleaf
Allott, Lt. A. J.....Co. 30, Bn. 7, Camp Greenleaf
Ash, Lt. H. E.....Bn. 7, Camp Greenleaf
Ashby, Lt. J. O.....Co. 28, Bn. 7, Camp Greenleaf
Baily, Lt. J. M.....Co. 30, Bn. 7, Camp Greenleaf
Bennett, Lt. J. H.....Co. 30, Bn. 7, Camp Greenleaf
Bibens, Lt. D. H.....Bn. 7, Camp Greenleaf
Blomquist, Lt. C. A.....Co. 28, Bn. 7, Camp Greenleaf
Boyle, Lt. W. H.....Co. 28, Bn. 7, Camp Greenleaf
Brant, Lt. F. F.....Co. 29, Bn. 7, Camp Greenleaf
Brooks, Lt. R. G.....Co. 30, Bn. 7, Camp Greenleaf
Brostrom, Lt. F. O.....Bn. 7, Camp Greenleaf
Brown, Lt. V. H.....Box 327, Camp Greenleaf
Buck, Lt. W. C.....Bn. 7, Camp Greenleaf
Button, Lt. O. G.....Co. 30, Bn. 7, Camp Greenleaf
Campbell, Lt. H. L.....Co. 30, Bn. 7, Camp Greenleaf
Campbell, Lt. J. S.....Co. 30, Bn. 7, Camp Greenleaf
Carey, Lt. E. F.....Co. 30, Bn. 7, Camp Greenleaf
Carroll, Lt. T. E.....Co. 30, Bn. 7, Camp Greenleaf
Chamberlain, Lt. A. H.....Co. 29, Bn. 7, Camp Greenleaf
Christ, Lt. F. J.....Co. 30, Bn. 7, Camp Greenleaf
Clem, Lt. B. H.....Bn. 7, Camp Greenleaf
Cooke, Lt. C. P.....Co. 31, Bn. 7, Camp Greenleaf
Corson, Lt. J. D.....Co. 30, Bn. 7, Camp Greenleaf
Crawford, Lt. C. D.....Bn. 7, Camp Greenleaf
Cripe, Lt. O. H.....Co. 30, Bn. 7, Camp Greenleaf
Currier, Lt. B. L.....Co. 28, Bn. 7, Camp Greenleaf
Diller, Lt. O. A.....Co. 29, Bn. 7, Camp Greenleaf
Dickman, Lt. A. J.....Box 804, Camp Greenleaf
Dionne, Lt. C. A.....Bn. 7, Camp Greenleaf
Dooley, Lt. C. T.....Co. 28, Bn. 7, Camp Greenleaf
Dornbusch, Lt. E. A.....Co. 28, Bn. 7, Camp Greenleaf
Duff, Lt. D. R.....Bn. 7, Camp Greenleaf
Elsbury, Lt. N. W.....Co. 31, Bn. 7, Camp Greenleaf
Espy, Lt. S.....Bat. 7, Camp Greenleaf
Evans, Lt. R. C.....Co. 30, Bn. 7, Camp Greenleaf
Fargus, Lt. G. I.....Bn. 7, Camp Greenleaf
Faulkner, Lt. C. M.....Co. 31, Bn. 7, Camp Greenleaf
Foley, Lt. J. W.....Co. 28, Bn. 7, Camp Greenleaf
Fuller, Lt. R. W.....Bn. 7, Camp Greenleaf
Gilbert, Lt. R. D.....Co. 28, Bn. 7, Camp Greenleaf
Gilfillan, Lt. J. E.....Co. 31, Bn. 7, Camp Greenleaf
Gochenour, Lt. R. B.....Co. 28, Bn. 7, Camp Greenleaf
Good, Lt. G. H.....Co. 28, Bn. 7, Camp Greenleaf
Gootee, Lt. L. M.....Co. 29, Bn. 7, Camp Greenleaf
Gordan, Lt. W. D.....Bn. 7, Camp Greenleaf
Graham, Lt. H. C.....Co. 31, Bn. 7, Camp Greenleaf
Green, Lt. R. L.....Co. 30, Bn. 7, Camp Greenleaf
Guffey, Lt. H. M.....Co. 28, Bn. 7, Camp Greenleaf
Hahn, Lt. W. A.....Co. 30, Bn. 7, Camp Greenleaf
Hetherington, Lt. J. L.....Co. 31, Bn. 7, Camp Greenleaf
Henno, Lt. G. B.....P. O. Box 107, Camp Greenleaf
Herron, Lt. Lynn.....Co. 30, Bn. 7, Camp Greenleaf
Hoffman, Lt. H. A.....Co. 30, Bn. 7, Camp Greenleaf

Holby, Lt. V. A.....Box 1109, Camp Greenleaf
Hoopes, Lt. H. A.....Bn. 7, Camp Greenleaf
Hopper, Lt. F. M.....Co. 31, Bn. 7, Camp Greenleaf
Howe, Lt. H. H.....Co. 31, Bn. 7, Camp Greenleaf
Huff, Lt. R. S.....Co. 29, Bn. 7, Camp Greenleaf
Irish, Lt. H. S.....Co. 30, Bn. 7, Camp Greenleaf
James, Lt. W. D.....Co. 31, Bn. 7, Camp Greenleaf
Jarvis, Lt. G. J.....Co. 31, Bn. 7, Camp Greenleaf
Jones, Lt. G. M.....Vet. Co. No. 1, Camp Greenleaf
Jones, Lt. J. K.....Co. 28, Bn. 7, Camp Greenleaf
Juckiness, Lt. E. M.....Co. 28, Bn. 7, Camp Greenleaf
Kauffman, Lt. G. R. H.....Co. 30, Bn. 7, Camp Greenleaf
Kenny, Lt. B. P.....Bn. 7, Camp Greenleaf
Koll, Lt. Harry.....Bn. 7, Camp Greenleaf
Kummer, Lt. J. W.....Co. 31, Bn. 7, Camp Greenleaf
Lamb, Lt. C. P.....Bn. 7, Camp Greenleaf
LeBlanc, Lt. J. E.....Co. 28, Bn. 7, Camp Greenleaf
Lee, Lt. T. M.....Co. 28, Bn. 7, Camp Greenleaf
Lenker, Lt. C. B.....Co. 28, Bn. 7, Camp Greenleaf
Libby, Lt. R. E.....Co. 29, Bn. 7, Camp Greenleaf
Lodge, Lt. H. G.....Bn. 7, Camp Greenleaf
Lucy, L. I.....A. R. D., 311, Macon
Lynn, Lt. E. M.....Co. 31, Bn. 7, Camp Greenleaf
Marshall, Lt. R. S.....Co. 31, Bn. 7, Camp Greenleaf
Martin, Lt. E. M.....Co. 28, Bn. 7, Camp Greenleaf
Masterson, Lt. J. E.....Co. 31, Bn. 7, Camp Greenleaf
Mathers, Lt. L. H.....Co. 28, Bn. 7, Camp Greenleaf
Mayne, Lt. E. W.....Co. 31, Bn. 7, Camp Greenleaf
McClean, Lt. F. H.....Co. 31, Bn. 7, Camp Greenleaf
McKibbin, Lt. J. A.....Co. 30, Bn. 7, Camp Greenleaf
McNabb, Lt. F. R.....Bn. 7, Camp Greenleaf
Melvin, Lt. V. W.....Co. 31, Bn. 7, Camp Greenleaf
Miller, Lt. E. V.....Bn. 7, Camp Greenleaf
Miller, Lt. L. E.....Co. 30, Bn. 7, Camp Greenleaf
Mitchell, Jas. C.....Co. 28, Bn. 7, Camp Greenleaf
Misner, Lt. A. C.....Co. 31, Bn. 7, Camp Greenleaf
Moles, Lt. I.....Co. 28, Bn. 7, Camp Greenleaf
Moorman, Lt. C. E.....Co. 29, Bn. 7, Camp Greenleaf
Mosey, Lt. O. Q.....Co. 31, Bn. 7, Camp Greenleaf
Moylan, Lt. E. J.....Co. 28, Bn. 7, Camp Greenleaf
Neudecker, Lt. E. W.....Co. 30, Bn. 7, Camp Greenleaf
Nichols, Lt. J. H.....Bn. 7, Camp Greenleaf
Osborn, Lt. F. C.....Co. 29, Bn. 7, Camp Greenleaf
Osborn, Lt. S. S.....Co. 29, Bn. 7, Camp Greenleaf
Paley, Lt. I.....Co. 31, Bn. 7, Camp Greenleaf
Parker, Lt. C. E.....Co. 31, Bn. 7, Camp Greenleaf
Parrish, Lt. C.....Box 1205, Camp Greenleaf
Pauhlman, Lt. V. C.....Bn. 7, Camp Greenleaf
Perdue, Lt. F. B.....Co. 31, Bn. 7, Camp Greenleaf
Peterson, Lt. W. L.....Co. 28, Bn. 7, Camp Greenleaf
Petry, Lt. C. O.....Co. 30, Bn. 7, Camp Greenleaf
Phalen, Lt. W. H.....Co. 31, Bn. 7, Camp Greenleaf
Phelan, Lt. J. D.....Co. 31, Bn. 7, Camp Greenleaf
Potter, Lt. L. R.....Co. 30, Bn. 7, Camp Greenleaf
Potts, Lt. F. E.....Co. 29, Bn. 7, Camp Greenleaf
Quarll, Lt. J. T.....Co. 29, Bn. 7, Camp Greenleaf
Rabin, N. W.....A. R. D., 311, Macon
Rasmussen, Lt. V. M.....Bn. 7, Camp Greenleaf
Reece, Lt. D. E.....Co. 31, Bn. 7, Camp Greenleaf
Reinhardt, Lt. R. R.....Bn. 7, Camp Greenleaf
Roberts, Lt. L. L.....Co. 31, Bn. 7, Camp Greenleaf
Rogers, Lt. E. M.....Bn. 7, Camp Greenleaf
Rosenthal, Lt. H. H.....Co. 30, Bn. 7, Camp Greenleaf

Ross, Lt. J. A.....Co. 31, Bn. 7, Camp Greenleaf
Ryan, Lt. J. P.....Co. 29, Bn. 7, Camp Greenleaf
Scanlon, Lt. W. J.....Bn. 7, Camp Greenleaf
Schopmeyer, Lt. A. C.....Co. 29, Bn. 7, Camp Greenleaf
Schuey, Lt. G. B.....Co. 30, Bn. 7, Camp Greenleaf
Schwalm, Lt. O. C.....Co. 28, Bn. 7, Camp Greenleaf
Secoy, Lt. C. W.....Bn. 7, Camp Greenleaf
Seymour, Lt. R. C.....Co. 28, Bn. 7, Camp Greenleaf
Sharp, Lt. L. P.....Bn. 7, Camp Greenleaf
Shipley, Lt. M.....Co. 28, Bn. 7, Camp Greenleaf
Showalter, Lt. R. A.....Box 301, Camp Greenleaf
Smathers, Lt. D. L.....Co. 29, Bn. 7, Camp Greenleaf
Smith, Lt. G. M.....Co. 30, Bn. 7, Camp Greenleaf
Smith, Lt. R. L.....Box 1305, Camp Greenleaf
Snedden, Lt. R. E.....Box 700, Camp Greenleaf
Sproesser, Lt. T. W.....Bn. 7, Camp Greenleaf
Stahl, Lt. D. F.....Co. 31, Bn. 7, Camp Greenleaf
Stanton, Lt. H. I.....P. O. Box 523, Camp Greenleaf
Stoll, Lt. I. V.....Co. 30, Bn. 7, Camp Greenleaf
Sturrock, Lt. A. P.....Bn. 7, Camp Greenleaf
Talty, Capt. R. C.....Bn. 7, Camp Greenleaf
Telford, Lt. R. A.....Bn. 7, Camp Greenleaf
Thomas, Lt. J. J.....Bn. 7, Camp Greenleaf
Tognotti, Lt. J. A.....Co. 28, Bn. 7, Camp Greenleaf
Trout, Lt. O. H.....Co. 30, Bn. 7, Camp Greenleaf
Viers, Lt. Carl.....Bn. 7, Camp Greenleaf
Walker, Lt. L. V.....Co. 29, Bn. 7, Camp Greenleaf
Ward, Lt. R. M.....Bn. 7, Camp Greenleaf
Watson, Lt. E. E.....Co. 29, Bn. 7, Camp Greenleaf
Weeden, Lt. H. B.....Box 201, Camp Greenleaf
Weir, Lt. Jesse.....Co. 31, Bn. 7, Camp Greenleaf
Weires, Lt. P. A.....Co. 28, Bn. 7, Camp Greenleaf
Weldishofer, Lt. W. M.....Box 500, M. O. T. C., Camp Greenleaf
Wentworth, Lt. J. E.....Bn. 7, Camp Greenleaf
Wessels, Lt. Geo.....Co. 31, Bn. 7, Camp Greenleaf
Wilhoit, Lt. C. R.....Co. 29, Bn. 7, Camp Greenleaf
Wicktor, Lt. C. E.....Co. 28, Bn. 7, Camp Greenleaf
Wilkins, Lt. W. I.....Co. 29, Bn. 7, Camp Greenleaf
Williams, Lt. D. K.....Co. 29, Bn. 7, Camp Greenleaf
Williams, Lt. E. E.....Co. 29, Bn. 7, Camp Greenleaf
Wilson, Lt. C. B.....Co. 30, Bn. 7, Camp Greenleaf
Wood, Lt. C. E.....Co. 29, Bn. 7, Camp Greenleaf
Woods, Lt. C. W.....Co. 29, Bn. 7, Camp Greenleaf
Wooters, Lt. H. S.....Co. 29, Bn. 7, Camp Greenleaf
Worrell, Lt. Geo.....Bn. 7, Camp Greenleaf
Yocom, Lt. E. J.....Co. 30, Bn. 7, Camp Greenleaf

ILLINOIS

Allen, Frank E.....4201 Berkeley Ave., Chicago
Arndt, H. F.....3953 Michigan Ave., Chicago
Bashford, O. D.....3825 Linden Ave., East St. Louis
Bateman, W. C.....Sullivan
Benjamin, F. H.....6732 Loomis St., Chicago
Bryan, H. E.....Sparta
Beckett, B. W.....4081 Oakland-Crescent St., Chicago
Blount, S. L.....B. A. I., Dept. of Agri., National Stock Yards
Brown, F. E.....Blandinsville
Bunn, T. L.....4201 Berkeley Ave., Chicago
Bovett, J. A.....2805 Indiana Ave., Chicago
Brankin, T. P.....Federal Bldg., Freeport
Burgess, S. H.....Tonica
Clarno, H. T.....Farmer City
Colson, C. F.....1136 E. 47th St., Chicago

Conard, A. J.....957 N. Lawndale Ave., Chicago
Cook ,J. D.....544 Veronica Ave., East St. Louis
Crans, M. L.....3801 N. Linden Ave., East St. Louis
Crowe, T. B.....2624 Indiana Ave., Chicago
Debold, W. O.....1010 E. 43d St., Chicago
Drayer, J. H.....A. R. D., Camp Grant
Edwards, A. C.....914a St. Clair Ave., East St. Louis
Erfurth, E. F.....3615 Iron St., Chicago
Gansel, B. E.....717 N. 9th St., East St. Louis
Grabb, E. A.....Bethany
Graham, C. R.....Exch. Bldg., National Stock Yards
Griffin, C. E.....Armstrong
Halsey, F. D.....1123 Kansas Ave., East St. Louis
Harmening, A. H. F.....2120 Sedgwick St., Chicago
Hastings, C. C.....Williamsville
Houchins, J. R.....3615 Iron St., Chicago
Householder, E. B.....Bement
Hagedorn, J. C.....6422 Blackstone Ave., Chicago
Handley, Lt. J. A.....3615 Iron St., Chicago
Huggins, M. J.....404 Spring St., Springfield
Hannon, Jos.....2227 N. Racine Ave., Chicago
Hauer, W. H.....4201 Berkeley Ave., Chicago
Hess, G. W.....4322 Emerald Ave., Chicago
Quinlan, J. E.....7844 Peoria St., Chicago
Hopkins, L. T.....R. R., Pleasant Hill
Jennings, J. E.....National Stock Yards
Johnson, E. M.....6639 Justine St., Chicago
Johnston, W. A.....501 W. Adams, Taylorville
Jones, T. K.....Athens
Kerr, C. L. E.....B. A. I., National Stock Yards
Krichel, J. H.....A. R. D., 321, Camp Grant
Larkin, Mark.....B. A. I., National Stock Yards
Lehman, C. L.....Flanagan
Linde, C. A.....5802 Wentworth Ave., Chicago
Lintner, J. J.....6208 Blackstone Ave., Chicago
Lorton, R. D.....4201 Berkeley Ave., Chicago
Loveland, C. A.....336 S. 43d St., Chicago
Makin, A. I.....B. A. I., National Stock Yards
Mampreian, C. G.....502 W. 45th St., Chicago
Morin, L. N.....McLean
Montgomery, W. A.....226 N. Hamlin Ave., Chicago
Martinson, V. V.....1010 E. 43d St., Chicago
Morin, L. H.....Waynsville
Hittle, R. E.....812 E. Monroe St., Bloomington
McDonald, Jas.....404 Spring St., Springfield
Meisner, F. C.....Glen Ellyn
Maloney, A. J.....1529 Gaty Ave., East St. Louis
Milligan, S. C.....602 Cahokia Bldg., East St. Louis
Myers, W. A.....Wenona
McFarland, J. D.....5801 Indiana Ave., Chicago
Noonan, A. J.....5504 S. Green St., Chicago
Nutt, R. H.....Drovers National Bank Bldg., Chicago
Nye, C. H.....Cambridge
Oltmanns, J. W.....Watseka
Okershauser, R. F.....5519 Kenwood Ave., Chicago
Pauly, C. F.....Blue Mound
Page, F. A.....7349 Union Ave., Chicago
Patch, F. G.....Roseville
Paul, A. F., Jr.....5946 Parnell Ave., Chicago
Pederson, P. T.....Barrington
Pickett, R. A.....B. A. I., National Stock Yards
Pieper, G. C.....Route 1, Granite City
Powell, J. S.....710 N. 8th St., East St. Louis

Quincy, T. E.....6847 Yale Ave., Chicago
Rinehart, H. C.....Rushville
Reamsnyder, F. J.....4751 Calumet Ave., Chicago
Shelton, J. T.....706 E. 51st St., Chicago
Stricker, C. L.....B. A. I., National Stock Yards
Stuck, D. F.....2022 N. 19th St., East St. Louis
Snyder, C. T.....1609 Hall St., East St. Louis
Stewart, L. C.....U. S. Dept. of Agri., National Stock Yards
Stewart, W. D.....1110 E. 42d Pl., Chicago
Taggart, J. W.....3816 Lake Park Ave., Chicago
Thigpen, Chas.....3615 Iron St., Chicago
Thurmon, F. S.....B. A. I., National Stock Yards
Tiedebohl, T. C.....6037 Woodlawn Ave., Chicago
Tierney, D. D.....9100 Hamilton Ave., Chicago
Van Der Veen, H. E.....3615 Iron St., Chicago
Wattenberg, J. G.....B. A. I., National Stock Yards
Welch, F. M.....6428 Dante Ave., Chicago
Whalen, J. H.....3750 W. 63d Pl., Chicago
White, H. A.....Wyoming
Winters, O. W.....Arthur
Wirthlin, J. R.....4335 Emerald Ave., Chicago
Word, Lt. N. E.....3339 Michigan Ave., Chicago

INDIANA

Clark, M. H.....Box 82, Seymour
Dragoo, J. A.....Connersville
Friedley, S. M.....228 Charles Ave., Bridgeport
Hyde, Roscoe.....R. F. D. 3, Brookville
Kirch, L. P.....315 Sanders St., Indianapolis
Boyer, H. Justine.....831 N. Alabama St., Indianapolis
LaMar, D. A.....105 N. Davidson St., Indianapolis
Magley, L. K.....Decatur
Mull, A. A.....Rushville
Murphy, J. H.....416 W. Washington St., Sullivan
Persells, H. V.....Box 304, Muncie
Porter, F. D.....Box 91, Evansville
Rike, C. H.....1442 S. Harding St., Indianapolis
Shealy, A. L.....Purdue University, Lafayette
Shoemaker, J. H.....105 N. Davidson St., Indianapolis
Wood, R. E.....Rockville
Worsham, Lt. J. C.....Quartermaster Dept., Jeffersonville

IOWA

Bailey, C. D.....207 W. Madison St., Washington
Breckerbaumer, H. E.....211 22d St., Sioux City
Bennett, A. W.....3610 6th Ave., Sioux City
Bolton, J. C.....642 Walnut St., Waterloo
Bower, H. C.....1172 Main St., Dubuque
Breckenridge, W. K.....313 Albany St., Ottumwa
Briggs, R. J. W.....Iowa Falls
Byrnes, R. C.....Traer
Beaumont, L. C.....Britt
Benbrook, E. A.....2823 Leek St., Ames
Buck, A. P.....2118 Story St., Boone
Byerley, J. H.....1726 E. Walnut St., Des Moines
Cole, C. G.....Iowa State College, Ames
Couch, O. J.....Remount Depot, Camp Dodge
Covault, C. H.....Iowa State College, Ames
Copland, F. B.....Logan
Combs, E.....230 Exchange Bldg., Sioux City
Campbell, R. H.....Blockton
Coleman, H. M.....Moorehead
Crosby, J. F.....Camp Hdqrs., Camp Dodge
Davis, R. E.....Ft. Dodge Serum Co., Ft. Dodge

Dawson, A. J.....Regt. Hosp., 351st Inf., Camp Dodge
Derivan, J. F.....care of Div. Surgeon, Camp Dodge
Dodd, W. E.....18 Federal Bldg., Des Moines
Drach, A. C.....33 Federal Bldg., Ft. Dodge
Dunn, E. G.....108 S. Madison St., Mason City
Engelbert, E. B.....Remount Depot, Camp Dodge
Evans, C. S.....1811 George St., Sioux City
Enger, O. M.....Rm. 18, Federal Bldg., Des Moines
Feuring, C. R.....1116 Mulberry St., Waterloo
Frakes, W. H.....Maquoketa
Francoise, W. I.....B. A. I., Sioux City
Franks, C. C.....Grimes
Getz, L. M.....310 Walnut St., Atlantic
Gillette, G. H.....108 E. Court St., Ottumwa
Glenn, J. C.....Norway
Gordon, W. M.....3605 6th Ave., Sioux City
Gilchrist, W. D.....413 S. 16th St., Cedar Rapids
Hunter, R. B.....Castana
Hasenmiller, F. H.....607 W. 2d St., Davenport
Hogan, Lt. L. J.....Farley
Hagerty, H. J.....5th and Clay Sts., Dubuque
Haggerty, L. V.....3812 Stone Ave., Sioux City
Hall, H. W.....627 N. Federal Ave., Mason City
Hawthorne, G. A.....Clarinda
Hewitt, E. A.....Vet. Divsion, Ames
Johnston, H. E.....Creston
Jones, L. L.....337th F. A., Camp Dodge
Jorgenson, G. E.....Clermont
Keith, C. L.....New Market
Kellogg, L. W.....Hull
Lumb, J. W.....1007 Nebraska St., Sioux City
Lauman, F. J.....3412 7th Ave., Sioux City
Leary, J. W.....813 7th St., Sioux City
Lawrence, H. J.....2137 S. Lemon St., Sioux City
Lefler, H. P.....714½ N. 15th St., Fort Dodge
Ludgate, Francis.....1416 4th Ave., N., Fort Dodge
McCabe, T. J.....Williamsburg
McCray, F. W.....1009 Newton St., Sioux City
Milner, C. A.....1809 S. Lemon St., Sioux City
McNamara, Lt. J. B.....Remount Depot, 322, Camp Dodge
McNutt, S. H.....259 Hyland Ave., Ames
McMillan, H. L.....Belle Plaine
Montgomery, Jno.....Anamosa
Moon, Lt. G. W.....337th F. A., Camp Dodge
Murray, Chas.....103 S. Hyland Ave., Ames
Nelson, S. K.....313th Train Hdqrs., Camp Dodge
Orr, H. W.....3003 West St., Ames
Olson, Carl.....Sac City
Parrish, G. M.....175th Inf. Brigade, Camp Dodge
Pinkerton, H. E.....Rm. 230 Exch. Bldg., Sioux City
Ross, W. G.....3928 Orleans St., Sioux City
Ries, S. L.....426 E. 4th St., Ottumwa
Radibaugh, S. I.....349 7th Ave., W., Cedar Rapids
Steiner, A. J.....Iowa State College, Ames
Simonson, W. E.....Cherokee
Smith, A. L.....1009 Newton St., Sioux City
Schuler, C. A.....3731 6th Ave., Sioux City
Schwab, M. E.....627 N. Federal Ave., Mason City
Steele, M. L.....Harlan
Stewart, C. A.....Tripoli
Stewart, D. B.....616 Kimball Ave., Waterloo
Stott, L. N.....Aux. Remount Depot, Camp Dodge
Studebaker, M. D.....Box 451, Madrid

Suit, F. T.....Waterloo
Schroeder, A. J.....Eldredge
Tesdell, Lt. R. H.....313th Div. Train. Hdqrs., Camp Dodge
Tillie, Lt. R. S.....Aux. Remount Depot, Camp Dodge
Truax, E. R.....Box 332, Sac City
Underwood, J. R.....313th Train Hdqrs., Camp Dodge
Van Tuyl, G. E.....Paullina
Vermillion, L. B.....1310 Burch Ave., Cedar Rapids
Whipple, G. E.....230 Exchange Bldg., Sioux City
Wilson, J. M.....Winnfield
Winnes, C. L.....Rath Packing Co., Waterloo
Wilson, F. M.....Mechanicsville
Yenner, B. H.....Ottumwa

KANSAS

Alvey, W. C.....3715 Metropolitan Ave., Kansas City
Bailey, A. L.....23 Federal Bldg., Kansas City
Beattie, F. S.....214 West St., Iola
Bower, C. W.....Hope
Boyce, N. V.....610 Sandusky Ave., Kansas City
Bromell, G. W.....1611 Garfield Ave., Kansas City
Burgett, J. L.....2132 N. 27th St., Kansas City
Cassell, A. F.....Beverly
Core, J. L.....416 Washington Blvd., Kansas City
Davis, C. H.....628 Freeman Ave., Kansas City
Erfurth, O. A.....1324 Cleveland, Kansas City
Flanagan, Asa.....Wakefield
Gingery, J. B.....1030 Bluemont Ave., Manhattan
Gaston, W. N.....Arnold Hall, Ft. Riley
Griffths, C. B.....Baileyville
Hammers, L. A.....Clearwater
Herchenroeder, F. L.....23 Federal Bldg., Kansas City
Hofferd, R. M.....92d Div., Vet. Detail, Ft. Riley
Honeywell, C. H.....K. S. A. C., Manhattan
Holm, R. E.....Rm. 29, Live Stock Exchange, Wichita
Huston, O. B.....2016 Jackson Ave., Wichita
Imler, F. A.....20 Federal Bldg., Kansas City
Jameson, E. F.....832 Fauromer Ave., Kansas City
Kilian, E. H.....214 Pierre St., Manhattan
Kirkpatrick, J. I.....Sedgwick
Krenek, R. F.....B. A. I., Kansas City
Lemery, A. A.....1910 Central Ave., Kansas City
McCroppin, C. R.....20 Federal Bldg., Kansas City
McGuire, M. W.....729 Stewart Ave., Kansas City
Poelma, L. J.....Arnold Hall, Ft. Riley
Randall, G. H.....610 Parallel Ave., Kansas City
Ranney, C. E.....1611 Garfield Ave., Kansas City
Scheloski, C. M.....835 Shawnee Ave., Kansas City
Shannon, J. V.....Morrill
Smith, W. A.....1952 N. 17th St., Kansas City
Sorenson, S. C.....Tescott
St. Clair, F. P.....23 Federal Bldg., Kansas City
Strodtman, O. E.....22 Federal Bldg., Topeka
Taylor, B. A.....54 S. 17th St., Kansas City
Thompson, J. B.....410 Parallel Ave., Kansas City
Trittle, F. L.....23 Federal Bldg., Kansas City
Wedemeyer, E. V.....23 Federal Bldg., Kansas City
Wilson, C. P.....M. O. T. C., Vet. Section, Ft. Riley
Wood, J. W.....411 N. 12th St., Kansas City

KENTUCKY

Biles, W. F.....Frankfort
Bratten, F. W.....325th F. A., West Point
Edwards, J. R.....Aux. Remount Depot, 319, Camp Taylor
Fisher, C. W.....117 S. 4th St., Danville

Horton, G. M.....Mt. Sterling
Place, G. S.....Aux. Remount Depot, 319, Camp Taylor
Pontius, R. T.....Exp. Station, Lexington
Quinn, M. A.....A. R. D., 319, Camp Taylor
Ryle, Kenneth.....Frankfort
Bard, Guy.....2031 Alta Ave., Louisville
Bond, S. L.....524 Custom House, Louisville
Butz, H. W.....2765 Long Ave., Louisville
Jones, F. B.....322 Raymond Ave., Louisville
Myers, H. H.....936 S. 5th St., Louisville
Titus, A. J.....Rm. 524 Custom House, Louisville
Winters, Raymond.....A. R. D., 319, Camp Taylor

LOUISIANA

Berger, H. C.....Thibodaux
Branigan, C. P.....De Ridder
Brand, Theodore.....Rayville
Breaux, C. F.....Houma
Bryson, B. G.....1118 Texas Ave., Shreveport
Clemens, W. A.....Columbia
Dwyer, J. E.....Box 1633, De Ridder
Ellis, G. E.....Box 137, Natchitoches
Gest, J. F.....A. R. D., 314, Camp Beauregard
Golden, G. E.....253 9th St., Baton Rouge
Gray, W. J.....Houma
Guilfoyle, H. N.....New Iberia
Harris, V. H.....Gen. Del., Lafayette
Jargo, L. N.....603 Roumain Bldg., Baton Rouge
Louden, G. R.....Box 61, Oberlin
Love, J. R.....603 Roumain Bldg., Baton Rouge
McCoy, C. M.....603 Roumain Bldg., Baton Rouge
Maxwell, C. B.....Plaquemine
Moore, W. F.....Box 480, Monroe
Murphy, E. E.....Franklin
Olson, Sigurd.....Benton
Orchard, P. J.....115 Main St., Baton Rouge
Prescott, A. T., Jr.....739 North St., Baton Rouge
Rafnel, R. V.....939 N. Blvd., Baton Rouge
Sevy, Claude.....Covington
Smith, J. M.....Crowley
Smith, R. L.....603 Roumain Bldg., Baton Rouge
Spackman, E. P.....P. O. Box 465, Alexandria
Springstun, M. V.....Denham Springs
Upton, J. R.....115 Main St., Baton Rouge
Ward, C. A.....Box 214, Lake Charles
Warren, R. E.....201 Linden St., Hammond
Webster, Chas.....Box 301, Marksville
Yoder, J. H.....Jonesboro

MAINE

Baker, J. W.....Fort Kent
Caughlin, D.....Exchange Hotel, Houlton
Potter, H. T.....Box 273, Calais

MARYLAND

Arnold, I. H.....Remount Depot, Camp Meade
Brown, W. J.....Frederick
Campbell, G. F.....A. R. D., 304 Camp Meade
Cass, P. J.....147 W. Washington St., Hagerstown
Ernest, L. B.....Connecticut Ave. and Baltimore St., Kensington
Herbert, W. L.....A. R. D., Camp Meade
Keller, F. M.....404 N. Castle St., Baltimore
Mann, Bernard.....A. R. D., 304, Camp Meade
Melody, G. C.....Oakland
Neidigh, M. W.....Remount Depot, Camp Meade
Runnells, R. A.....A. R. D., 304, Camp Meade

Reeder, W. C.....Rising Sun
Smallbone, G. E. M.....A. R. D., 304, Camp Meade
Trapkey, C. A.....A. R. D., 304, Camp Meade

MASSACHUSETTS

Ash, J. J.....24 Walnut St., Somerville
Brock, R. O.....15 Clyde Rd., Watertown
Brown, H. E.....Springfield, Brightwood
Creedon, P. J.....509 Grafton St., Worcester
Crossman, E. A.....73 Dedham Ave., Needham
Fetter, G. E.....71 Commonwealth Rd., Watertown
Fitzpatrick, A. C.....8 Forest St., Cambridge
Hill, H. N.....32 Lunning St., Hyde Park, Boston
Pierce, J. D.....47 High St., Springfield
Pugh, H. C.....302d F. A., Camp Devens
Ryder, J. F.....Custom House Bldg., Boston
Smart, J. J.....50 Columbus Ave., Somerville
Zimmerman, I.....care of Springfield Prov. Co., Springfield

MICHIGAN

Ackerson, J. L.....Milan
Blue, Maurice.....A. R. D., 320, Camp Custer
Curtice, A. B.....31 Ferris St., Hillsdale
Fess, F. J.....567 Dragoon Ave., Detroit
Hanson, F. W.....A. R. D., 320, Camp Custer
Lynch, D. J.....A. R. D., 320, Camp Custer
Marks, David.....347 Hendrie St., Detroit
Newton, H. N.....Old State Block, Lansing
Rader, W. A.....1268 Theodore St., Detroit
Rath, R. B.....160th Depot Brig., Camp Custer
Stafseth, H. J.....A. R. D., Camp Custer
Zeltzer, J. E.....410 Pallister Ave., Detroit
Shore, Lt. C. B.....A. R. D., 320, Camp Custer
Splan, C. E.....15 E. Woodbridge St., Detroit

MINNESOTA

Lynch, G. P.....Montevideo

MISSOURI

Arnold, T. F.....5077 Vernon Ave., St. Louis
Berry, E. H.....Eldon
Barr, W. A.....8th and Garden St., St. Joseph
Bunting, E. B.....422 Lee St., St. Joseph
Brown, H. P.....2230 Felix St., St. Joseph
Curry, H. E.....3746 Highland Ave., Kansas City
Collins, H. R.....532 E. Missouri Ave., St. Joseph
Cary, E. J.....500 Live Stock Exchange, Kansas City
Cary, E. F.....1705 E. 36th St., Kansas City
Cock, J. H.....3709 Agnes St., Kansas City
Cooper, D. G.....5902 Walnut St., Kansas City
Clement, C. B.....3503 Wyoming St., Kansas City
Cooper, J. D.....4416 Fairmount Ave., Kansas City
Cowherd, C. M.....4541 Chouteau Ave., St. Louis
Divelbiss, W. P.....402 S. Main St., Clinton
Dolan, J. T.....3430a McKean Ave., St. Louis
Ettling, C. C.....3606 College Ave., Kansas City
Everly, G. P.....2605 Duncan St., St. Joseph
Frye, F. C.....1948 Calhoun St., St. Joseph
Faunce, A. L.....2740 Tracy Ave., Kansas City
Glover, E. K.....317 Argyle Bldg., Kansas City
Gross, Lt. Fred.....5907 Lake Ave., St. Joseph
Grunwold, C. H.....1506 S. 25th St., St. Joseph
Haynie, E. H.....602 Independence Ave., St. Joseph
Hartmann, G. R.....2712 N. 21st St., St. Louis
Hawley, H. W.....Rm. 800, Exchange, Kansas City
Huston, J. W.....724 Bennington Ave., Kansas City

Kellogg, E. A.....1125 Ridenbaugh St., St. Joseph
Mutziger, G. J.....425 Lee Ave., Sta. D., St. Joseph
McNally, H. R.....2816 Monterey St., St. Joseph
Mayes, J. M.....1923 Lawn Ave., Kansas City
Newberg, Aaron.....2518 Harrison St., Kansas City
Newman, R. R.....3015 Bartold Ave., Maplewood
Oosten, R. Y.....809 S. Vandeventer Ave., St. Louis
Park, J. F.....Box 42, West Plains
Patterson, W. E.....3947 Agnes Ave., Kansas City
Pickett, Theo.....3304 Chestnut St., Kansas City
Rathman, G. A.....1535 Chelsea, Kansas City
Sappington, M. A.....3323 Montgall Ave., Kansas City
Stingley, O. A.....1317 E. 29th St., Kansas City
Swim, B. H.....4435 Scarritt Ave., Kansas City
Schaefer, E. H.....3215 Anderson Ave., Kansas City
Sanders, C. L.....5149a Page Ave., St. Louis
Spillman, F. L.....215 E. Calo. Ave., St. Joseph
Timmerman, H. J.....4121a Hartford St., St. Louis
Tyler, D. A.....5717 Troost Ave., Kansas City
Underwood, C. S.....130 S. White Ave., Kansas City
Ward, E. B.....Lebanon
Woodring, F. R.....402 9th St., Chillicothe
Wright, C. H.....3017 Cherry St., Kansas City
Walch, L. I.....4823 King Hill Ave., St. Joseph
Wright, J. B.....Live Stock Exchange, South St. Joseph

MISSISSIPPI

Homer, Lt. H. Z.....113th Train. Hdqrs., Camp Shelby
Jordan, E. Birkett.....Purvis

MONTANA

Roth, F. G.....Box 1077, Forsyth
Smith, N. B.....2411 2nd Ave., N., Billings
Cramer, Capt. E. J.....Ft. Keogh
Swaney, F. C.....Box 443, Billings

NEBRASKA

Bomgardner, G. I.....4615 S. 25th St., South Omaha
Boone, David C.....911 Capitol Ave., Omaha
Burke, E. W.....4611 S. 25th St., South Omaha
Clark, J. S.....4526 S. 22d St., Omaha
Corbet, H. T.....3328 S. 24th St., Omaha
Draper, Jno. T.....4115 S. 24th St., Omaha
Edgecomb, Guy.....4611 S. 25th St., South Omaha
English, Andrew.....3809 S. 23d St., South Omaha
Franz, J. L.....2111 Martha St., Omaha
Frederick, L. D.....4310 S. 23d St., Omaha
Griest, H. L.....4201 S. 20th St., South Omaha
Gjertson, A. G.....4418 S. 21st St., South Omaha
Harper, B. E.....Hooper
Hayward, C. J.....4310 S. 23d St., Omaha
Himsel, Edw.....2820 F St., South Omaha
Johnson, H. S.....Box 343, Central City
Kern, E. W.....care of Claremont Inn, Omaha
Kline, G. J.....4228 S. 21st St., Omaha
Melchiorsen, W. G.....3609 S. 28th St., Omaha
Murdoch, J. W.....3810 S. 23d St., South Omaha
Perry, A. M.....2005 J St., South Omaha
Roome, Henry.....4216 S. 22d St., Omaha
Robertson, W. M.....4212 S. 22d St., Omaha
Ruck, M. A.....4426 S. 20th St., Omaha
Smith, A. R.....2615 D St., South Omaha
Stoug, G. C.....1904 H St., South Omaha
Sullivan, S. E.....4831½ S. 24th St, South Omaha
Taylor, B. P.....3613 S. 28th St., South Omaha

Taylor, G. T.....524 N. 33d St., Omaha
Trump, D. E.....Utica
Vermillion R. C.....2308 E St., South Omaha
Young, C. J.....3814 S. 27th St., Omaha
Zumwalt, A. R.....4428 S. 22d St., Omaha

NEW JERSEY

Arnold, Lt. J. F.....80th F. A., Camp Merritt
Birenberg, F.....45 Ravine Ave., Jersey City
Deegan, W. J.....527 Benson St., Camden
Derrick, J. D.....350th F. A., Camp Dix
Green, L. E.....Box 33, Woodbury Heights
Crouse, J. W.....A. R. D., 303, Camp Dix
Grimes, W.....53 Forest Ave., Hawthorne
Herron, Lt. J. M.....Bordentown
Jenison, J. S.....20 Federal Bldg., Jersey City
McBride, Archibald.....24 Federal Bldg., Paterson
Mann, M. K.....Bloomsbury
Mosher, L. A.....Camp Veterinarian, Camp Dix
Sheff, W. R.....A. R. D., Camp Dix
Shreck, Horst.....A. R. D., Camp Dix
Schoudan, Theodore.....A. R. D., Camp Dix
Pardue, J. J.....250 S. Burnett St., East Orange
Pinkerton, F. E.....Frenchtown
Suits, G. N.....24 P. O. Bldg., Paterson
Yoder, E. C.....268 Armstrong Ave., Jersey City

NEW MEXICO

Flanigan, J. L.....Box 464, Albuquerque
Hess, Lt. H. E.....Post Vet. Hosp., Camp Furlong
Ollstro, R. M.....107 Oak St., Clayton
Shorten, R. L.....A. R. D., Camp Cody, Deming

NEVADA

Earl, W. B.....University of Nevada, Reno
Wright, L. H.....University of Nevada, Reno

NEW YORK

Baum, H. F.....193 S. 9th St., Brooklyn
Baxter, L. E.....241 Decatur St., Brooklyn
Bicks, Nathan.....518 E. Houston St., New York City
Biederman, C. R.....1852 63d St., Brooklyn
Chase, J. M.....96 Indian Church Road, Buffalo
Claris, H. W.....629 Clinton St., Buffalo
Doyle, M. J.....1817 Morris Ave., Bronx
Dunkel, J. D.....50 Harrison St., New Rochelle
Danziger, Max.....149 Clinton Ave., Brooklyn
Elson, R. E.....Vet. Camp, Camp Upton, Long Island
Eadie, J. A.....1320 Bay St., Rosebank, Staten Island
Easen, Thos.....323 W. 34th St., New York
Faulder, E. T.....69 Monticello Ave., Buffalo
Feld, Emanuel.....104 W. 42d St., New York
Gardner, C. A.....50 Granite St., Brooklyn
Glynn, F. J.....Chester
Gogerty, J. D.....129 S. 12th Ave., Mt. Vernon
Grossman, I. M.....409 Spencer Trask Bldg., Albany
Habecker, I. N.....116 30th St., Woodcliff
Halkin, I. H.....1426 Clinton Ave., Bronx
Henning, Henry.....530 E. 17th St., New York
Jacobs, Jos.....65 E. 106th St., New York
Ives, L. D.....109 Sterling St., Brooklyn
Jansen, J. F.....care Depot Q. M., 39 Whitehall St., New York
Johnson, G. M.....159 W. 126th St., New York
Kay, A. W.....267 Moffatt St., Brooklyn
Kock, Hermann.....57 Bushwick Ave., Brooklyn

Koten, L. R.....491 E. 140th St., New York
Leonard, H. D.....122 State St., Albany
Long, Albert.....144 Decatur St., Brooklyn
Lyon, B. M.....Pearl River
Manz, Wm.....620 E. 158th St., New York
McAustin, David.....1632 E. 12th St., Brooklyn
Miller, ..F. H.....146 W. 54th St., New York
Moore, E. V.....Brookton
Mullings, R. M.....Depot Q. M., 39 Whitehall St., New York
Murphy, M. J.....348 W. 118th St., New York
Olding, F. R.....50 Granite St., Brooklyn
Porteus, J. R.....care Y. M. C. A., New York
Pohl, Emil.....46 Floss Ave., Buffalo
Ring, E. S.....88 Hicks Pl., Woodside, Long Island
Rosekraus, W. R.....1226 Evergreen Ave., Bronx
Rothang, Christian.....Sea Cliff, Long Island
Sander, E. L.....2572 Bainbridge Ave., Bronx
Schaffer, Harry.....255 E. Broadway, New York
Schueler, O. R.....1314 Jefferson Ave., Brooklyn
Serling, J. L.....168 Suffolk, St., New York
Stafford, E. C.....R. F. D. 2, Cortland
Steckel, L. M.....51 Chambers St., New York
Thackaberry, J. J.....118 Toledo St., Elmhurst
Vann, G. H.....166 Garfield Pl., Brooklyn
Way, W. D.....Ithaca
Weaver, W. P.....327 E. 51st St., New York
Wootton, W. C.....2650 Main St., Buffalo

NORTH CAROLINA

Abernethy, R. M.....Box 205, Monroe
Hoyt, David M.....A. R. D., 306, Camp Greene
Richardson, C. E.....A. R. D., 306, Camp Greene
Scheloski, F. J.....A. R. D., 306, Camp Greene
Smith, M. G.....1609 Grace St., Wilmington
Yager, E. P.....Washington

NORTH DAKOTA

Bernhardt, R. W.....Enderlin
Cohenour, H. H.....Bismarck
Ewen, L. C.....Mayville
Hollenbeck, J. B.....Bismarck
Miles, J. V.....Ellendale

OHIO

Barnes, A. S.....318 S. State St., Marion
Bamber, S. D.....1322 W. 81st St., Cleveland
Bontrager, C. F.....3066 W. 101st St., Cleveland
Carl, L. W.....112 S. Washington Ave., Columbus
Carey, G. A.....West Milton
Conn, G. H.....636 E. State St., Fremont
Engard, P. T.....120 N. Court St., Marysville
Engelhart, P. T.....120 N. Court St., Marysville
Griffin, Lt. C. J.....Spencerville
Hartke, G. B.....802 Findlay St., Cincinnati
Hinkle, T. B.....147 Griswald St., Delaware
Hughes, M. W.....1462 Woodward Ave., Cleveland
Julien, A. H.....802 Bellows Ave., Columbus
Jollie, M. R.....1926 W. 71st St., Cleveland
Kackley, O. C......168 Inf. Brig. Hdqrs., Camp Sherman
Kolo, Ralph.....3471 Mississippi Ave., Riverside, Cincinnati
Leslie, R. F.....6805 Bridge Ave., Cleveland
McEldin, Lohr.....1284 Westlake Ave., Lakewood
McCandless, C.....Lisbon
McHugh, W. O.....3113 W. 98th St., Cleveland
Menke, Lt. L. L.....158th Dep. Brig., Camp Sherman

Moye, R. A.....Camp Veterinarian, Camp Sherman
Myers, H. H.....9717 Allerton Ave., Cleveland
Myers, Irvin.....Vet. Hosp. 8, Am. Ex. Forces, France
Moriarity, E. E.....108 Chittenden Ave., Columbus
Peters, H. F.....Ashville
Pile, E. F.....84th Div. Office, Div. Vet., Camp Sherman
Powell, N. C.....8205 Clark Ave., Cleveland
Salisbury, R. P.....North Olmsted
Storch, W. C.....124 E. 5th St., Middletown
Summer, O. L.....311 S. Main St., Upper Sandusky
Vance, J. W.....Rm. 44, Federal Bldg., Columbus
Wahn, A. J.....3251 Glendora Ave., Cincinnati
Wende, Harry.....2067 W. 87th St., Cleveland
York, C. H.....Box 935, Columbus

OKLAHOMA

Allen, L. J.....1604 N. Ellison St., Oklahoma City
Cram, H. C.....600 S. Choctaw St., El Reno
Dunaway, W. F.....Pauls Valley
Finn, Lt. Jas. A.....Vinito
Houston, W. H.....Fort Reno
Jones, T. A.....215 Exchange Bldg., Oklahoma City
Kidder, H. R.....Ponca City
Ludwig, H. T.....101 E. 3d St., Oklahoma City
Mahan, A. R.....215 Exchange Bldg., Oklahoma City
Meredith, S. M.....1740 W. 11th St., Oklahoma City
Meads, E. W.....care F. F. Meads, Cherokee
Michel, H. A.....300½ N. Reno, Oklahoma City
Orendorff, C. E.....Byron
Otey, D. S.....Poteau
Osborn, C. R.....118½ N. 3d St., Chickasha
Pryor, F. C.....Wewoka
Roscoe, H. A.....Oklahoma City
Scott, W. R.....Sulphur
Sutherland, R. C.....Box 441, Hobart
Wilson, E. L.....Eufaula

OREGON

Joss, E. C.....402 U. S. Custom House, Portland
Tweed, P. T.....TA

PENNSYLVANIA

Aldrich, E. M.....Grove City
Anderson, A. R.....742 Kennedy Ave., Johnstown
Andress, W. R.....1128 Wagner Ave., Philadelphia
Baker, E. A.....Bloomsburg
Brim, P. F.....1824 Arch St., Philadelphia
Behney, J. E.....Fredericksburg
Colflesh, J. H.....Confluence
Curley, E. M.....Tremont
Cooke, W. A., Jr.....1247 N. 28th St., Philadelphia
Edelman, F. J.....151 Main St., Bath
Fegley, N. K.....Emans
Fox, W. W.....Hummelstown
Hartenstein, F. H.....New Freedom
Hartman, J. D.....6705 Lansdown Ave., Philadelphia
Hassel, Chester.....3601 Walnut St., Philadelphia
Hogg, E. N.....71 W. Jackson St., Wilkes-Barre
Hyde, Andrew.....419 S. 63d St., Philadelphia
Hardenbergh, J. G....Army Vet. Lab., 39th and Woodland, Philadelphia
Johnston, S. H.....3729 N. 15th St., Philadelphia
Keck, M. W.....746 Main St., Slatington
Kimball, V. G.....39th and Woodland Ave., Philadelphia
Keiter, C. F.....114 Ardmore Ave., Philadelphia
Lutes, Emory.....241 S. Main St., Wilkes-Barre

Lynett, J. F.....419 Vine St., Scranton
Martien, H. D.....4054 Pouelton Ave., Philadelphia
Moon, J. G.....1927 S. 17th St., Philadelphia
Mayer, F. B.....Canton
Miller, F. B.....Brooklyn
Neal, C. C.....Glenolden
O'Leary, J. P.....207 E. Ridley Ave., Ridley Park
Parkerson, C. A.....1650 N. 61st St., Philadelphia
Prothero, W. B.....109 Main St., Johnstown
Riley, G. W.....Newhope
Romig, F. C.....Beaver Springs
Schneider, R. H.....536 Rockland St., Philadelphia
Singst, W. H.....Harrisburg
Swank, G. K.....Revere
White, Thos.....1210 S. 28th St., Philadelphia
Sipos, A. J.....1223 Arch St., Pittsburgh
Spitz, Arthur.....3216 Columbia Ave., Philadelphia

RHODE ISLAND

Cherrington, K. G.....152 Webster St., Pawtucket

SOUTH CAROLINA

Bosley, M. A.....1315 Marion St., Columbia
Boyd, Z. C.....Walterboro
Brundage, H. S.....Georgetown
Buchanan, J. W.....Clemson College
Dixon, J. T.....Columbia
Fortz, Lt. W. E.....A. R. D., Camp Jackson
Gallagher, P. J.....Columbia
Hirleman, Lt. W. B.....Depot Brig. 156, Camp Jackson
Hood, H. B.....Lake City
Krause, C. A.....Summerville
Boylston, Lt. Jas. W.....Springfield
Rawson, G. W.....V. O. R. C., A. R. D., 307, Camp Wadsworth
Peterson, Lt. L. N.....Animal Emb. Depot, Charleston

SOUTH DAKOTA

Eagle, J. N.....Clark
Faun, G. C.....417 Franklin Ave., Sioux Falls
Ferrin, A. G.....411 W. 11th St., Sioux Falls
Yonkerman, D. P.....B. A. I., Sioux Falls

TENNESSEE

Kernohan, Edw.....care of Kenoker Bros., Nashville
Verduin, F. J.....Union City

TEXAS

Becker, D. C.....Brenham
Belton, M. J.....606 Flatiron Bldg., Ft. Worth
Bennett, D. H.....Box 242, A. & M. College, College Station
Bourland, C. C.....80th F. A., Camp McArthur
Brenner, Wm., Jr.....315 E. 4th St., Ft. Worth
Bright, W. A.....A. R. D., 329, Camp Travis
Bryan, Herbert.....1325 N. Houston Ave., Ft. Worth
Callaway, C. P.....1607 Clinton Ave., North Ft. Worth
Cannon, E. C.....202 Live Stock Exchange Bldg., Ft. Worth
Cole, T. W.....Weatherford
Combs, L. G.....602 Flatiron Bldg., Ft. Worth
Crawford, Capt. N. N.....Camp Vet., Camp McArthur
Gandy, M. H.....309th Cav., Ft. Sam Houston
Grafke, Harry.....606 Flatiron Bldg., Ft. Worth
Hartman, Lt. J. L.....5th U. S. Cavalry, Ft. Bliss
Haworth, F. E.....218 Live Stock Exchange Bldg., Ft. Worth
Hazzard, C. A.....1408 Lagonda Ave., Ft. Worth
Hobdy, W. M.....525 Chronicle Bldg., Houston
Horstman, A. W.....606 Flatiron Bldg., Ft. Worth

Jones, F. R.....602 Flatiron Bldg., Ft. Worth
Kettler, H. H.....218 Live Stock Exchange Bldg., Ft. Worth
Kuttler, A. K.....Clarksville
Laitinen, Edwin.....care Food Inspection Dept., Texarkana
McCallam, J. A.....9th Engrs. Mtd., Camp Courshesne, El Paso
Meyer, P. L. R.....1610 Homan Ave., Ft. Worth
Nichols, H. C.....Hdqrs. 7th Div., Camp MacArthur
Nord, C. F.....A. R. D., 329, Ft. Sam Houston
Nye, E. W.....care Chamber of Commerce, Sherman
Owens, Irvin.....1512 Lipscomb St., Ft. Worth
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Robards, Jesse.....care Court House, Dallas
Sanderson, W. R.....Hillsboro
Seher, O. W.....910 Park Ave., Ft. Worth
Singleton, Henry.....306 Federal Bldg., Houston
Sutton, G. E.....2512 Roosevelt Ave., Ft. Worth
Warner, D. E.....606 Flatiron Bldg., Ft. Worth
Wilkinson, J. A.....Lufkin
Williamson, M. A.....1406 N. Houston St. ,Fort Worth
Wolfe, Wm. R.....A. R. D., 329, Ft. Sam Houston
Wolma, Fred J.....062 Deep Eddy Ave., Austin

VERMONT

Conley, C. C.....208 King St., Burlington
DeFosset, A. J.....care Comm. of Agri., St. Albans
Stewart, R. B.....310th Cav., Ft. Ethan Allen

VIRGINIA

Adamson, G. V.....Vet. Train. School, Camp Lee
Codd, R. M.....611 Chestnut St., Portsmouth
Chalmers, D. J.....V. T. S., Camp Lee
Denham, A. H.....418 Lyric Bldg., Richmond
Eshleman, Capt. J. M.....V. T. S., Camp Lee
Farmer, H. T.....316 N. Henry St., Richmond
Fessler, R. H.....225 N. High St., Harrisonburg
Glover, G. S..British Rem. Comm., 3509 Huntington Ave., Newport News
Gregory, G.....3509 Huntington Ave., Newport News
Hill, J. B.....Box 416, Bristol
Miller, A. W.....Harristonburg
Pickeral, H. E.....Middletown
Muldoon, W. E.....Vet. Train. School, Camp Lee
Renwald, R. T.....Vet. Train. School, Camp Lee
Rowe, H. H.....801 Hanover St., Fredericksburg
Spittler, L. K.....Luray
Teeple, S. L.....Vet. Train. School, Camp Lee
Wilson, J. T.....Hampton
Price, E. W.....Dunmore

WISCONSIN

Bennett, E. B., Jr.....819 Wentworth Ave., Milwaukee
Cummings, L. R.....Spring Valley
Curtis, C. R.....Portage
Drum, L. C.....Menomonie
Gillen, Solon.....Park Hotel, Madison
Houston, Cecil.....933 Mound St., Milwaukee
Kreutzer, R. H.....778 Farwell Ave., Milwaukee
Licking, L. A.....548 Linebarger Terrace, Milwaukee
Luckey, R. J.....1206 First Ave., Eau Claire
Martin, J. J.....2124 University Ave., Madison
Mount, S. C.....360 First Ave., Milwaukee
Ogilvie, R. A.....Lodi
Seymer, H. F.....617 6th Ave., Milwaukee
Smeltzer, H. A.....Baldwin
Smith, R. E.....6240 Delaware Ave., Milwaukee

Snyder, Simon S....care R. E. Cochrane, 450 Greenbush St., Milwaukee
Trish, K. A.....432 Federal Bldg., Milwaukee
Wachs, H. C.....737 Farwell Ave., Milwaukee

A. E. F.

Combs, A. W.....1st Reserve Supply Train, A. P. O. 708, A. E. F.
Edwards, Maj. T. H.....Div. Vet., 87th Div., A. E. F.
Martin, Lt. J. J.....341st F. A., A. E. F.
Perdue, H. S.....care Chief Surgeon, A. E. F.
Ratigan, W. J.....Vet. Hosp. 9, A. E. F.
Sharp, F. S.....care Chief Surgeon, A. E. F.
Stifler, J. R.....Vet. Hosp. 10, A. E. F.

CANADA

Abraham, R. S.....88 City Councillors St., Montreal, Quebec
Allen, J. A.....20 Pansy Ave., Ottawa
Armstrong, F. R.....48 Centre St., Montreal, Quebec
Bonsfield, C. J.....120 Upper Prince St., Charlottetown, P. E. Island
Bright, W. H.....273 E. Dundas, Toronto, Ontario
Brookes, W. T....Wildlohne Sattair, Ladysmith, Vancouver Island, B. C.
Campbell, J. A.....8 Edward St., Toronto
Carey, M. L.....Millgrove, Ontario
Etienne, G. U.....67 Drummond St., Montreal, Quebec
Flook, B. C.....Eriksdale, Manitoba
Gauvin, E. C.....223 Lasalle Rd., Verdun, Montreal, Quebec
Gibson, S. J.....Govan, Saskatchewan
Henderson, W. A.....11 Daly Ave., Stratford, Ontario
Lundie, A. C.....Charlottetown, P. E. I.
Lawson, Wm.....140 Gladstone Ave., Hamilton, Ontario
McCallum, F. B.....1220 Mount Royal Ave., Montreal, Quebec
Mitchell, C. A.....Vet. Research Lab., Lethbridge, Alta.
Moon, W. J.....Vermilion, Alta.
Weeks, B. E.....Consecon, Ontario

CANAL ZONE.

Porter, R. O.....Box 411, Cristobel

PHILIPPINES

Sumerlong, M. D.....Coll. of Vet. Science, U. P. 722, Tayuman, P. I.
Ferriels, Vincente.....Bureau of Agriculture, Manila, P. I.
San Augustin, Gregorio.College of Vet. Science, Univ. of the Philippines, Manila, P. I.
Merchant, E. S. D....Coll. of Vet. Science, Univ. of Phil., Manila, P. I.
Lenton, Capt. W....M. C., Commanding No. S. V. E. S., B. E. F., France

ATTENDANCE AT A. V. M. A. MEETING AT PHILADELPHIA, 1918.

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ARKANSAS—R. M. Gow.

CALIFORNIA—George H. Hart, Harry Malcolm.

COLORADO—I. E. Newsom, G. A. Nehr.

CONNECTICUT—Thomas Bland, Charles L. Colton, J. L. Devereaux, V. M. Knapp, P. T. Keeley, Earle F. Schofield, Oscar Schreck, J. M. Whittlesey.

DELAWARE—Harry McDaniel, Jr., H. B. McDowell, Fred T. Rubl.

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GEORGIA—W. M. Burson, W. W. Webb.

U. S. S. IDAHO—Wm. S. Wright.

ILLINOIS—E. L. Bertram, S. E. Bennett, W. F. Christiansen, D. M. Campbell, L. Enos Day, J. J. Ferguson, Chas. Frazier, J. F. Hernshien, J. J. Hayes, R. E. Hittle, C. O. Kroener, W. B. Holmes, W. N. Neil, N. S. Mayo, Geo. A. Lytle, E. L. Quitman, H. R. Ryder M. P. Whitten, C. A. White.

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IOWA—H. D. Bergman, Lloyd E. Foster, J. D. Grossman, H. H. Havner, G. H. Johnson, J. S. Koen, H. S. Murphy, C. H. Stange, R. D. Wall, I. D. Wilson.

KANSAS—Jas. Fleming, L. M. Goss, B. M. Murphy, G. M. Potter, Jos. P. Scott, A. Trickett.

KENTUCKY—S. F. Musselman, R. T. Pontius, Francis O. Schneider, D. E. Westmorland.

LOUISIANA—W. H. Dalrymple.

MARYLAND—R. H. Forsythe, J. Huebschmann, Frank M. Keller, C. E. Poe, R. C. Reed, W. C. Reeder, E. C. Schroeder, Hulbert Young.

MAINE—W. L. Mebane, W. H. Robinson, Hy. B. Wescott.

MASSACHUSETTS—E. R. Brackett, B. F. Calley, W. H. Dodge, Wm. J. Hennessey, W. S. Plaskett, Benj. D. Pierce, L. A. Paquin, J. M. Robinson, Warren L. Thayer, J. W. Winchester, Wm. T. White.

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MINNESOTA—Chas. E. Cotton, Wm. C. Prouse, M. H. Reynolds, S. H. Ward.

MISSISSIPPI—E. Barnett, O. M. Norton, E. M. Ranck.

MISSOURI—Frank Breed, J. W. Connaway, W. W. Eagle, G. G. Graham, A. T. Kinsley, A. O. Lundell, R. C. Moore, Carl J. Norden.

NEBRASKA—P. P. Taylor.

NEW HAMPSHIRE—A. L. Edmunds.

NEW JERSEY—H. H. Bair, R. A. Carter, J. F. Creedon, L. Blake Davis, Wm. J. Deegan, Major Thos. H. Edwards, Arthur D. Goldhaft, Jas. T. Glennon, Lawrence Green, L. P. Hurley, Frank Hayden, C. W. Humphrey, G. F. Harker, J. B. Hopper, L. D. Horner, Frederic S. Jones, Wm. H. Koch, R. B. Little, Wm. Herbert Lowe, J. Payne Lowe, A. P. Lubach, M. K. Mann, Capt. L. A. Mosher, J. K. McConeghy, W. G. Middleton, Wm. J. Reagan, P. F. Runyon, J. A. Stuart, F. G. Steinbach, Thos. E. Smith, Geo. W. Smith, E. W. Smille, Chas. C. Schloemer, Geo. B. Vliet, H. E. Winter.

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NORTH CAROLINA—O. H. Graham, G. A. Roberts.

NORTH DAKOTA—H. L. Foust.

OHIO—W. A. Axby, L. P. Beechy, C. H. Case, A. S. Cooley, H. L. Durby, W. O. McHugh, H. D. Sheeran, E. H. Shepard.

OREGON—B. T. Simms.

PENNSYLVANIA—A. R. Anderson, W. R. Andress, E. P. Althouse, Herman F. Baum, H. B. Brady, S. E. Bruner, Jno. L. Bradley, Adolph Berg, Chas. W. Boyd, U. S. G. Beiber, H. W. Barnard, M. F. Barnes, J. W. Bushong, G. L. Bushong, Harry E. Bender, E. E. Behrens, Fred Boerner, Jr., E. L. Cornman, B. P. Chodos, W. P. Collins, J. W. Crouse,

Thos. Castor, W. J. Crocker, H. R. Church, Norman C. Craig, C. H. Dibbell, E. S. Duebler, J. D. Dunkel, M. W. Drake, B. J. Drolet, F. R. De Haven, Robt. M. Ellis, F. W. Fernsler, W. A. Frazier, N. K. Fegley, W. S. Gimper, Major S. H. Gilliland, R. C. Gross, James Graham, W. A. Haines, Jacob Helmer, M. P. Hendrick, A. E. Hollister, Andrew Hyde, M. J. Harlcuir J. M. Hageman, F. H. Hartenstein, J. D. Hartman, Capt. E. Hogg, J. M. Hafsteeter, W. G. Huyett, C. M. Heller, S. G. Henderson, O. T. Henderson, D. E. Hickman, Chester M. Hoskins, Wm. H. Ivens, L. H. Johnston, R. L. Kann, V. G. Kimball, F. T. Kocher, D. R. Kohler, M. W. Keck, Wm. Hy. Kelly, Thos. Kelly, J. W. Lallade, E. S. Lan, Frank Lentz, J. F. Lynet, Wm. J. Lentz, F. H. McCarthy, Calvin W. Moyer, G. F. Murphy, F. B. Mayer, H. D. Martien, Harry A. Meisner, Ira Mitterling, M. J. Maloney, T. E. Munce, C. Courtney McLeLan, C. J. Marshall, F. A. Marshall, Wm. Malcolm, W. B. Morgan, Freeman A. Marshall, F. B. Miller, F. S. Morris, Herman M. Moses, H. T. McNeal, F. J. McNeal, J. P. Miller, H. B. Mitchell, C. C. Neal, T. F. Nugent, C. O. Neuhaus, E. W. Newcomer, I. C. Newhard, Jno. P. O'Leary, A. W. Ormiston, J. H. Oyler, C. B. Palmer, M. E. Patrick, Wm. T. Phillips, Ira S. Pope, Chas. A. Parkerson, Jr., W. B. Prothero, L. Price, Edgar S. Powell, P. E. Quinn, H. C. Reynolds, J. O. Reed, F. C. Roinig, C. G. Rohrer, F. B. Rutherford, Jno. Reichel, S. S. Rodgers, C. S. Rockwell, G. W. Riley, W. H. Ridge, M. D. Rentschler, E. L. Reed, W. L. Rhoads, C. W. Springer, F. C. Schnell, F. H. Schneider, W. C. Seigmund, John Shelley, A. W. Schnell, F. N. Sherrick, E. L. Stubbs, E. L. Simpson, J. P. Srover, C. S. Schaufter, B. F. Senseman, G. K. Swank, J. F. Schmidt, C. M. Strickler, E. E. Terry, H. W. Turner, Jno. H. Turner, E. N. Tingley, B. M. Underhill, A. R. Ward, H. H. Weinberg, Thos. White, H. G. Werntz, Jno. Winstanley, H. S. Wright, H. K. Wright, W. E. Wight, E. H. Yunker.

RHODE ISLAND—J. M. Armstrong, Thos. E. Robinson.

SOUTH CAROLINA—F. P. Caughman, John H. Morse, B. K. McInnes.

TENNESSEE—Wm. Bell, M. Jacobs, T. W. Morgan, W. G. Shaw.

TEXAS—Lloyd C. Ewem, J. L. Hartman, J. D. Rinker.

SOUTH DAKOTA—John T. E. Dunwoodie.

VIRGINIA—H. H. Adair, H. Bannister, W. G. Chrisman, J. G. Ferneyhough, Thos. Fraser, W. T. Gilchrist, H. Clayton Moyen, Capt. P. F. Wallingford.

WEST VIRGINIA—S. E. Hershey, L. N. Reefer.

WISCONSIN—O. H. Eliason, S. J. Walkley.

84th DIV., U. S. A.—Major G. A. Hauvy.

CANADA—J. A. Allen, Jas. A. Campbell, S. Hadwen, Geo. E. Hilton, C. H. Higgins, J. B. Hollingsworth, F. H. S. Lowrey, Lt.-Col. A. Ower, F. Torrance.

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DELAWARE—Mrs. H. P. Eves.

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INDIANA—Mrs. J. L. Axby, Mrs. E. A. Cahill.

IOWA—Mrs. J .D. Grossman, Mrs. H. H. Havner, Mrs. G. H. Johnson.

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MARYLAND—Mrs. J. L. Axby, Miss Gertrude Elbert.

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MICHIGAN—Mrs. R. P. Lyman, Mrs. Compton, Mrs. J. R. Wardle.

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NORTH DAKOTA—Mrs. H. L. Foust.

RHODE ISLAND—Mrs. Thos. E. Robinson.

SOUTH CAROLINA—Mrs. F. P. Caughman, Miss M. E. McInnes.

TENNESSEE—Mrs. B. Mehard.

VIRGINIA—Mrs. H. Bannister and daughter.

WEST VIRGINIA—Mrs. S. E. Hershey, Miss Mae Hershey, Miss Lola Sharpless.

CANADA—Mrs. J. A. Campbell.

VISITORS.

DELAWARE—Morris Zurkow

ILLINOIS—I. C. Brenner.

MASSACHUSETTS—Jesse A. Viles.

MICHIGAN—Leonard P. Hoskins.

MISSOURI—C V. Haver, Albert Smith Kinsley.

PENNSYLVANIA—H. W. Allyn, Edwin Abramsen, Clarence Bley, T. S. Carlisle, H. C. Campbell, P. P. Gheen, Bery Gunner, Chas. J. Gery, Jno. J. Graham. G. G. Gil, James C. Horner, F. J. Maurer, R. H. Mooney, J. F. Russell, Jr., S. E. Weber.

WEST VIRGINIA—Jos. Hershey.

A CORRECTION.

In the Secretary's report, page 172 of the November Journal, it was stated that the number of applicants for 1918 was 800.

Dr. Day, former Acting Secretary, now informs the Journal that the report at first submitted was written a few days before the Philadelphia meeting, and that afterwards quite a number of applicants were received. The exact number that were elected to membership in the Association was 1,017, instead of 800, as previously stated.

OTHER ASSOCIATIONS.

WESTERN MICHIGAN VETERINARY MEDICAL ASSOCIATION.

The fall meeting of the Western Michigan Veterinary Medical Association was held on Friday, October 4, at Hotel Holland, Holland, Ottawa County, Michigan, with a good attendance present. Four new members were admitted to the association.

The afternoon session was opened by a very interesting talk by Dr. Watson, of B. A. I., Kalamazoo, on "Hog Cholera Control in Michigan." Mr. A. Bental, Agricultural Agent, Allegan County, was present, and some steps were taken to improve the usefulness of his office, both to the laity and the veterinary profession in the county, by inviting the veterinarians to take part in farmers' institutes held in the counties.

Drs. M. E. Elinga, S. Tacoma and Neinhuis talked on complications of retained placenta and its relations to calf scours and calf pneumonia, and the treatments, which proved very instructive to all.

The remainder of the afternoon was spent at the factory of the Veterinary Specialty Company, where working models of operating tables, stocks, etc., were demonstrated to all by Mr. Olinger, the manager. All reported the factory's output and models the best ever seen, and the trip was of interest to all.

O. H. Van Brussel,
Secretary and Treasurer.

BRITISH COLUMBIA VETERINARY ASSOCIATION.

The eleventh annual meeting of the British Columbia Veterinary Association was held in the assembly hall of the B. C. University at Vancouver, B. C., on October 5, 1918, and the program was as follows:

A visit to the permanent site of the university, at Point Grey, where a start is being made in laying out the grounds and the erection of buildings, a modern dairy barn being just completed.

On Saturday a public meeting was held, at which the gen-

eral public was invited, also leading stock breeders and dairymen were sent special invitations.

The speakers were Dr. Thomson of Keremeos, who read a paper on the necessity for rural meat inspection by a system of communal slaughter houses, where all animals for food would be slaughtered under inspection. The association has been trying to educate the public to the necessity for this for some time, and hopes to have another public meeting before the meeting of the Legislature, and to bring it to the notice of the Cabinet through the help of various public men, and we have asked the Government for assistance in publishing this and other papers, so that the consuming public may understand the dangers of eating uninspected meat. Considerable discussion followed.

The next paper was one by Dr. Howell on "Post-Parturient Diseases," and was well discussed. Then followed one by Dr. Jagger on the latest methods of treating and combating contagious abortion, of which subject he has made a special study. The dairymen were particularly interested in this, especially as to the cost of the same.

Dr. Bruce of Agassiz then read a paper on the poisonous plants of British Columbia. This is a subject that needs more attention paid to it, and Dr. Bruce has done a lot of careful work on it and showed numerous full-sized specimens, pressed and mounted, that he had gathered and identified.

After this meeting the general meeting of the association was held, Dr. S. F. Tolmie, M. P., our President, being in the chair. Dr. Tolmie gave us an address on the activities of the association during the past year, the steps taken to the formation of a Dominion Veterinary Advisory Board, and the appointment of Dr. C. D. McGillvray as head of the Ontario Veterinary College, and closed by asking that the members at large show more active interest in the affairs of the association.

Routine business followed, the financial statement not being as good as last year, though the receipts were larger, owing to the cost of publicity work in connection with the proposed rural meat inspection, the Secretary's honorarium was increased and a letter of thanks was ordered sent to the Dean of the University, thanking him for the use of the assembly hall.

Then followed the election of officers, which resulted as follows:

President—Dr. S. F. Tolmie.

Secretary and Treasurer—Dr. Kenneth Chester.

Council—Dr. A. Damman, Dr. J. W. Darby, Dr. W. Thomson, Dr. F. W. Ottewell, and Dr. L. D. Swenerton.

In the evening the association gave a banquet at the Hotel Vancouver, to which prominent stock breeders and dairymen were invited, together with the Dean and several professors of the university.

Dr. S. F. Tolmie was in the chair and appropriate toasts were proposed and responded to. This brought to a close a most successful annual meeting.

KENNETH CHESTER,
Secretary and Treasurer.

PHILIPPINE VETERINARY MEDICAL ASSOCIATION.

The Philippine Veterinary Medical Association held its annual meeting at Manilla, in February last, and had a five days' most interesting and instructive session, according to Dr. S. Youngberg, President of the association.

The association was welcomed by His Excellency Francis Burton Harrison, Governor-General of the Philippine Islands; and among the numerous interesting papers presented were the following:

Protozoölgy and Its Relation to Veterinary Medicine, by Professor Frank G. Haughwout, Chief, Department of Medical Zoölogy, University of the Philippines.

Necessity for Professional Coöperation, Dr. Stanton Youngberg, Professorial Lecturer, College of Veterinary Science.

Relation of the Department of Agriculture to the Veterinarian, Dr. Galicano Apacible, Secretary of Agriculture and Natural Resources.

Recent Investigations and Remarks on Rinderpest, Dr. W. H. Boynton, Dean, College of Veterinary Science.

Recent Nutritional Investigations on Maintenance and Growth, Dr. R. B. Gibson, Chief, Department of Physiology, College of Medicine and Surgery.

The University and the Future Veterinarian, Hon. Ignacio Villamor, President, University of the Philippines.

Animal Husbandry in the Philippines, Dr. A. S. Shealy, Chief, Animal Husbandry Division, Bureau of Agriculture.

Poisonous Plants in the Philippines, Dr. Elmer Drew Merril, Professor of Botany and Chief of Botanical Division, Bureau of Science, Manilla.

Experiences in Private Practice in the Philippines, Dr. Victor Buencamino, Associate Professor of Veterinary Surgery, College of Veterinary Science.

In addition to the literary part of the program, the entertainment feature was not overlooked, and the meeting concluded with a sumptuous banquet.

The officers of the association elected for the ensuing year were as follows:

President—S. Youngberg.
Vice President—Victor Buencamino.
Secretary—Eustace S. D. Merchant.
Treasurer—Sixto Carlos.

CHICAGO BUREAU OF ANIMAL INDUSTRY ASSOCIATION.

The regular monthly meeting of the Chicago Association of Bureau of Animal Industry Veterinarians was held in their hall on Friday, November 8. There was an excellent attendance.

Dr. Robert Nutt read an unusually interesting paper on sausages, giving a list of the great variety that were manufactured, their composition, and method of manufacturing and curing. The different races from central Europe have their own special variety of sausage. There are scores of different sausages manufactured to meet demands. The ingredients of the sausages are all carefully inspected. They are made under the best sanitary conditions and furnish a palatable, nutritious and economical meat food.

Dr. J. Simpson read a paper on Texas fever, giving the important features of the disease and emphasizing the post-mortem lesions that should be looked for by inspectors in the slaughtering beds.

Dr. N. S. Mayo, guest of the Association, expressed the appreciation of the American Veterinary Medical Association for the cordial support given by the veterinarians of the B. A. I. He called attention to the fact that the Bureau of Animal Industry was in normal times the largest employer of expert veterinarians in America, and probably in the world.

The subject of Dr. Mayo's address was "Veterinary Tropical Experiences." He told of the difficulties encountered and the results obtained in the republic of Cuba. The lecture was illustrated by lantern slides giving glimpses of the tropics and tropical conditions.

COMMUNICATIONS.

To the Editor:

On page 72 of the October number of The Journal the School of Veterinary Medicine at the University of Pennsylvania is mentioned as one of the several schools which did not answer a questionnaire sent out by the Committee on Intelligence and Education. In order that the record may be complete, will you please state in your next issue that the questionnaire referred to was not received in the office of the school, and that, if it had been received, it would have been promptly filled out and returned to the committee?

Wm. J. Lentz, Acting Dean,
School of Veterinary Medicine,
University of Pennsylvania.

INTRA-DERMAL TUBERCULIN TEST.

Editor of the Journal:

I read with much interest the report by Dr. French of Wyoming on the intra-dermal tuberculin test, as used by him, in that state. Particularly do I note his remark, "That it is a good test" under the conditions in Wyoming. Under the conditions to be had in south Florida, I consider it the only reliable test for tuberculosis that we now have. Speaking particularly of Hillsborough County, and locally, of the cattle in and around Tampa, Fla., we have the Jersey cow almost exclusively. Careful observation during fourteen years' practice here has shown me that our dairy cattle, in complete health, carry a normal range of temperature through three to four degrees daily—that is, a dairy cow in full milk will show 100°F. or 101°F. at the time of the morning milking. She will come in for evening milking and give a reading of 103°F. to 104°F. The thermic test will condemn this cow. The intra-dermal test will pass her and post-mortem examination will substantiate the latter test. I have had a number of opportunities to follow just such a circumstance through. Our dairy cattle are never stabled. We use open sheds for milking and the cattle are in the stanchions only long enough for the milking. Now, hold these cattle up for a day or two, for temperature readings, or drive them in and out at unusual times, and high temperatures are certain; and it is entirely

unnecessary to use tuberculin to get them. Also, there is a marked decrease in the milk flow. I have used the intra-dermal test on some thousands of cattle and they never know they are interfered with. In the spring of 1906 I tested, by the thermic method, some three thousand head of dairy cattle that were then supplying Tampa with milk. At that time I noticed that no thermometer was needed to pick out the reacting cattle, following inoculation. They came in lame and with a swelling at the point of inoculation on the morning after the latter had been made. This circumstance I reported in the then *Veterinary Review*. I knew the Wyoming and Montana ranges, from the viewpoint of a "cow-puncher," in the front end of the '80's, and if Dr. French and his staff have the class of cattle to deal with that I knew at that time I do not envy them the work. At least, I should want my "lass" and my "tie rope" right regular.

FRED W. PORTER, D. V. M.

NECROLOGICAL.

MAJOR HARRY DOUGLAS GILL, V. S.

The following tribute to the late Major Gill, from the pen of Dr. Robert W. Ellis, which was published in the New York University Veterinary Bulletin, issued October 26, was forwarded to the Journal for the November issue, but reached us too late for publication:

Major Harry D. Gill died at Waynesville, North Carolina, on October 3, 1918, in his fifty-seventh year. Born in New York City in 1861, Professor Gill as a boy attended the public schools and later the College of the City of New York, the Bellevue Hospital Medical College and the New York College of Veterinary Surgeons, from which last institution he was graduated in 1884 with the Veterinary Surgeon's degree.

He immediately entered into the practice of his profession, and early in his professional career associated himself with his *alma mater;* and while still a young man had attained the responsible position of Dean of the New York College of Veterinary Surgeons and Professor of Veterinary Medicine, which position he held until the amalgamation of that school with the American

Veterinary College in 1899, when he was made Secretary of the faculty of the amalgamated school and Professor of Surgery, which position he held up to the time of his death. Professor Gill was a man of tremendous energy, for which his practice and school work were not even sufficient, and he early became connected with the U. S. Department of Agriculture, the New York State Department of Agriculture, the New South Wales Government export, the New York City Department of Health and the New York Police Department in the medical care of the horses of its mounted division. He was still actively connected with the New York State Department of Agriculture at the time that he received his commission from the United States Government and entered the Army Veterinary Service in the Spring of 1917. Here, as in his private professional life, he worked hard and incessantly. He entered the Army Service from a spirit of patriotism, sacrificing great interests in cheerfully accepting a second lieutenancy and assuming duties that merited a much higher rank. His excellent work in organizing and conducting his office soon demonstrated this, and he was promoted on his merits to the rank of major and placed in charge of the port of embarkation at Newport News.

In the veterinary school his energy and enthusiasm were an inspiration alike to his fellow instructors and students, who all keenly feel his loss. In the profession and in the associations in which he took a keen and active interest he was held in high esteem and occupied a warm place in the hearts of all who knew him well.

Funeral services were held at his late residence, 337 East 57th Street, on Tuesday evening, October 8th, when fifty-five veterinarians (three from the Army Veterinary Service in the uniforms of their rank) and hosts of friends, as well as members of Tecumseh Lodge, F. and A. M., were gathered to pay their last respects to our departed alumnus, friend and brother. Preceding the beautiful and impressive Masonic services, Dean Hoskins paid a feeling tribute to the life and beautiful character of our departed brother. Chancellor Brown of New York University, in a letter under date of October 4th, 1918, to the members of the veterinary and medical faculties, gave expression of his feelings in the following words: "With the deepest sorrow, the Chancellor of the University announces the death, after a short illness, on Thursday, October the third, at Waynesville, North Carolina, of Major Harry Douglas Gill, V. S., Secretary of the New York

State Veterinary College, established at New York University."

The Army Veterinary Corps, though denied the extensive representation that its sentiment prompted, because of the strict quarantine placed on the various camps due to the prevalence of Spanish influenza, gave expression of their deep feelings in a beautiful floral tribute. Other floral pieces were sent from the American Veterinary Medical Association, the Students' Association at the college, of which Major Gill was Honorary President, from the Faculty of the Veterinary School and from individual veterinarians, as well as from his many friends.

Major Gill is survived by a widow, two sons and a daughter, a father, sister and brother, Dr. Wallace Gill. His two sons are in the service of their country in France, one being Lieutenant H. Percy Gill of the Army Veterinary Service.

DR. C. C. NEAL.

At the time of his death, Dr. Neal was a staff member of the Mulford Biological Laboratories, Glenolden, Pa., and specially interested in the production of tetanus toxin. He left the laboratory on September 28, apparently normal. He went direct to Green Castle, Pa., for a visit, and on arrival there, on the afternoon of the 28th, he complained of not feeling well. During the following week he developed a typical case of influenza, complicated with pneumonia, and died on October 6.

The Mulford News Letter had the following obituary notice: "We deeply regret the death of Dr. C. C. Neal, who passed away last Sunday. He was the first from the Glenolden Laboratories to fall at his post of duty during the present epidemic. Honor to his name, the same as to those who have fallen on the other side."

DR. STEPHEN C. MILLIGAN.

Dr. Stephen C. Milligan, veterinary inspector in the Bureau of Animal Industry, stationed at East St. Louis, Ill., died suddenly in Chicago on September 27. Dr. Milligan is survived by a mother, sister, and brother. The deceased was a graduate of the McKillip Veterinary College in 1910, and was elected a member of the American Veterinary Medical Association at the recent meeting in Philadelphia. He was born March 31, 1882, at Chicago, Ill.

DR. HECTOR FRASER.

Dr. Hector Fraser, Veterinary Inspector at the Fort Worth Stockyards, died on October 16 of heart failure as the result of an acute attack of influenza. He was a member of the A. V. M. A. Dr. Fraser was a temporary employee, having entered the service on September 3. It is said that he gave up a very enjoyable practice at Taylor, Texas, for the sole purpose of serving his country during the war; and in this respect it may be said that he gave his life for his country. Dr. Fraser was buried at Fort Worth by his new friends, no relatives being in attendance.

H. GRAFKE.

DR. THOMAS B. CARROLL.

Dr. Thomas B. Carroll, a member of the A. V. M. A., died at Camp Bragg on November 10, after a brief attack of pneumonia. The Doctor had spent most of his life in Wilmington, N. C., where he practiced his profession and held the position of city meat and milk inspector. About four months ago he entered the Officers' Training School at Camp Greenleaf, and upon the completion of which he was commissioned first lieutenant. He was detailed camp veterinarian at Camp Bragg (Fayetteville, N. C.) ten days before his death. He was a member of the North Carolina Board of Veterinary Examiners, and was very prominent in municipal affairs in Wilmington. He was also very progressive, and did much to elevate his profession to a high plane. Dr. Carroll was fifty years of age, and left an invalid widow and one daughter eight years old; also a married sister and two brothers.

M. G. SMITH.

HON. ANDREW DICKSON WHITE.

Hon. Andrew Dickson White, "spiritual founder" and first president of Cornell University, died in Ithaca, N. Y., November 4, 1918. He was buried November 7, his 86th birthday. Dr. White was an eminent diplomat, scholar and educator . Few if any of America's representatives in foreign countries have rendered greater service to the American people. In 1884 he was an attacheé to the American legation in St. Petersburg, now Petrograd, Russia. He was Minister to Germany from 1878 to 1881 when Bismarck was at his zenith, and he was Minister to Russia

from 1892 to 1894. The crowning honor which came to him in the course of his public career was his appointment as chairman of the American delegation to The Hague peace conference in 1899.

He was for half a century a guiding spirit in American life, but the responsibility which accompanied every opportunity he discharged nobly. It may be said of him, as it was said of Columbus, that "he had a taste for great things."

To many, Dr. White is known most for his work in connection with the founding and building of Cornell University, which he himself considered as the principal achievement of his long life. He says in his autobiography: "By the part I have taken in that more than any other work in my life I hope to be judged." In the spring of 1868, just before the opening of the university, he went to Europe in search of distinguished men for the faculty of the new institution. Among the men whom he brought to the university was Dr. James Law. Dr. White was a strong believer in higher veterinary education and loyally supported Dr. Law in his efforts in the advancement of the profession. V. A. M.

PERSONAL.

First Lieutenant E. Lapple, Veterinarian of the 345th F. A., from "somewhere in France" writes that he is temporarily detached from this organization, but expects to return to it soon. He states that his "Journals are about a month late, but they are particularly interesting, and I find them very helpful." The doctor also states that there are many interesting things to write about, but that he has many reports to make out, and "It's time for mess and the veterinarians surely do their part here."

MISCELLANEOUS.

Dr. W. A. Scott, Columbus, Ga., has been appointed a member of a recently created Board of Health Control by the city of Columbus. The new Board consists of five members. The veterinary profession is gradually being recognized as a most important factor in health control.

"SNEEZING HOGS THREATEN PORK SUPPLY."

A correspondent has sent The Journal the following clipping from the Davenport (Iowa) Times, of November 6. It may interest some; perhaps instruct (?) a few; and mayhap disgust a goodly number of the members of the profession:

"The epidemic of hemorrhagic septicemia among herds of hogs in the county is assuming such alarming proportions that County Farm Advisor Palmer R. Edgerton is issuing warnings to farmers to use every precaution to stamp out the disease. Hundreds of hogs in both the upper and lower ends of the county are afflicted with the disease, some in more severe form than others.

"The county farm expert advises all farmers who suspect that their hogs are not well to communicate with him at once and he will visit the sick herds and ascertain if they are afflicted with the malady which is sweeping over the country and which, if not stopped, seriously threatens the pork supply. Mr. Edgerton is equipped with information to combat the disease, and will gladly dispense it to farmers who need it.

"Hemorrhagic septicemia is a form of influenza, similar to that prevailing among people at this time. While it is not believed to be directly contagious, the malady travels in great epidemics, which makes it as dangerous as though it were contracted from one animal to another.

"Mr. Edgerton is making every effort to impress on the minds of farmers the great danger of the disease and is prepared to give them every aid possible.

"As far as known, the disease does not afflict any other kind of stock except swine."

Dr. William Moore has been transferred from the work of tick eradication, Baton Rouge, La., to such work on the Jacksonville, Florida, force.